



Dear Colleague:

The United States lost one of its most productive and influential figures in TB control this summer: Dr. William Stead, former TB controller of Arkansas, died in July. Dr. Stead was a very creative and thoughtful contributor to the science of TB. Over a 30-year period, he helped pioneer the use of intermittent short-course regimens, made notable contributions to our understanding of TB epidemiology (such as the role of progression to TB disease vs. reinfection in late life, transmission from prison to community, transmission within nursing homes, and the protective effect of prior infection following re-exposure), guided one of the premier U.S. TB control programs for many years, and advocated effectively for the role of medical informatics in medical and public health research and practice. An inquisitive but polite colleague, he encouraged young investigators and contributed to many successful careers. His personal influence, creativity, and thoughtfulness will be missed. His obituary is included in the Personnel Notes section of this issue; I hope you will take a moment to read about his inspiring life and career.

The Advisory Council for the Elimination of Tuberculosis (ACET) convened in Atlanta June 23-24 in Corporate Square. Among those giving updates was Dr. Janet Collins, the Acting Director of the National Center for HIV, STD, and TB Prevention (NCHSTP). Dr. Collins, a behavioral scientist, comes to NCHSTP from the position of Deputy Director of CDC's National Center for Chronic Disease Prevention and Health Promotion. She gave an update on NCHSTP activities and news, including Dr. Andy Vernon's returning to DTBE to take the position of Chief of the Clinical and Health Systems Research Branch and Ann Cronin's joining DTBE as Associate Director for Management and Operations. She spoke as well on CDC's Futures Initiative, reminding us that to achieve the greatest health impact and reduce health disparities for our customers, CDC needs to focus on four key elements: alignment of our strategies with our goals and actions; performance measurement and improvement; integration across organizational units; and marketing. Under the Futures Initiative, NCHSTP is being combined with two other CDC centers, the National Center for Infectious Diseases (NCID) and the National Immunization Program (NIP), under a proposed new Coordinating Center for Infectious Diseases. Following Dr. Collins' remarks, Dr. Michael Tapper and I discussed the revised infection control guidelines; Dr. Tapper explained that the new guidelines give much attention to the choice of respirators. After OSHA withdrew its proposed TB standard in December 2003, it set July 1, 2004, as the deadline for implementing the General Industry Respiratory Protection standard. After the meeting, ACET drafted and sent a letter to OSHA indicating its concerns.

We then heard from Ms. Eva Moya of the Border Health Commission, who discussed the binational card and the fact that health officials are seeing evidence of its success: patients are adhering to therapy. Dr. Sue Maloney talked about the continuing and serious challenges of overseas TB screening and stateside notification of immigrating TB patients. Dr. Michael Kurilla of the National Institutes of Health (NIH) gave an overview of the extensive portfolio of TB research projects his agency supports and conducts to find new TB drugs, vaccines, and diagnostics. From DTBE, Dr. Jerry Mazurek gave an update on the next generation of the QuantiFERON[®] test; Dr. Elsa Villarino provided updates on the TB Trials Consortium; and Dr. John Jereb discussed tumor necrosis factor blockers (TNF) and TB. These TNF blockers are given to patients with rheumatoid arthritis and other autoimmune conditions. They block the body's natural macrophage-mediated immune response, thus preventing the inflammation caused by the immune response but also leaving the body vulnerable to infectious agents such as *M. tuberculosis*. DTBE and partners recently published guidance on TNF blockers: Tuberculosis associated with blocking agents against tumor necrosis factor-alpha---California, 2002--2003. *MMWR* 2004; 53(30): 683-686.

The next morning was taken up with a discussion of budget and funding issues. Dr. Geralyn Johnson of the Division of Immigration Health Services (DIHS), Health Resources and Services Administration (HRSA) followed, announcing that in May 2004, Immigration and Customs Enforcement (ICE) had approved the institution of a medical hold procedure for TB patients being deported from the country. The medical hold allows DIHS to notify local public health departments, enroll patients in treatment programs, and coordinate their removal with the public health authorities in the receiving country. Diana Schneider of DIHS and Mark Lobato of DTBE were acknowledged as having been instrumental in getting this change made, and Dr. Johnson requested formal ACET recognition of their contributions. Dr. Bess Miller of the Global AIDS Program provided updates on the President's Emergency Plan for AIDS Relief (PEPFAR). This initiative was announced in January 2003, and has expanded to 15 countries now. Eight of those 15 are among the 22 countries with the highest TB burden, and 13 of the 15 have had large annual increases in TB since 1997. Dr. Miller suggested that TB DOTS programs can contribute to meeting the goals of PEPFAR, and that possibly PEPFAR funds could be used to support TB control. Dr. Michael Fleenor then gave an update on the activities of the ACET Workgroup on TB in the Foreign-born. The workgroup had been charged with determining if the 1998 guidelines on TB control in foreign-born populations are still adequate; their well-researched finding was no, they are not. The next step will be to obtain ACET input into how the guidelines need to be revised. Finally, Dr. Marisa Moore provided an update on Healthy People (HP) 2010 objective 14-11, Reduce tuberculosis. DTBE has proposed a revision of the HP 2010 target, from 1.0 new case per 100,000 population to 3.0 new cases per 100,000 population. This change will bring our HP 2010 target into alignment with the DTBE goal described in the Government Performance Results Act document.

On July 19, we were officially joined by our new coworkers from the former Division of AIDS, STD, and Tuberculosis Laboratory Research (DASTLR), now the DTBE Tuberculosis / Mycobacteriology Branch; Dr. Tom Shinnick is the branch chief. Staff of this important unit conduct laboratory studies on the microbiology, molecular biology, and biochemistry of mycobacteria, as well as on the pathogenesis and immunology of mycobacterial infections. Program areas focus on understanding *M. tuberculosis* and the pathogenesis of tuberculosis, but also incorporate studies with several other important pathogenic mycobacteria such as *M. avium* and *M. leprae*. The branch consists of two teams or sections: the Diagnostic Mycobacteriology Team, which is lead by Dr. Beverly Metchock, and the Immunology and Molecular Pathogenesis Team, which is lead by Dr. Jack Crawford.

Please mark your calendars: the 2005 TB Controllers Workshop has been scheduled for June 28-30, 2005, at the J.W. Marriott - Lenox in Atlanta. Pre-conference meetings will be scheduled for Monday, June 27.

Our work is becoming more interesting and challenging as CDC experiences a major reorganization and U.S. TB cases are increasingly found among complex social networks and foreign-born populations. Thanks to all of you for your willingness to weather these changes and your steady devotion to our common goal of TB prevention, control, and elimination.

Kenneth G. Castro, MD

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Number 3, 2004

HIGHLIGHTS FROM STATE AND LOCAL PROGRAMS

Daily Accountability and Innovative Methods That Push Performance and Achieve Higher Outcomes

In many areas, the demand for TB control services outweighs available resources. Such is the case in Houston, Texas. Teamwork simplifies the processes, but how can a team of 6 to 10 supervisory and administrative staff direct, plan, evaluate, and provide daily supervision to achieve the program objectives of a large metropolitan TB program covering 617 square miles? Houston TB staff consistently deliver and supervise between 1,200 and 2,000 directly observed therapy (DOT) doses per week.

The answer: increase accountability to ensure *daily* achievement of objectives through *daily* administrative and supervisory staff meetings, and implement innovative methodologies.

Accountability, Accountability, Accountability
Accountability drives improvement. Accountability enables changes that impact outcome. How do we achieve it? Push *daily* accountability and conduct *daily* administrative and supervisory staff meetings. Staff come prepared to share yesterday's outcomes, issues, and concerns, and are ready to assess situations and offer solutions.

The Meeting - "You want what? DAILY staff meetings? You've got to be kidding!" Staff were

reluctant when it was first suggested. "We're too busy."

"We don't have time to meet every day."

"Mornings are the busiest times."

"How about meeting once a week?"

These were only a few of the many objections expressed by the administrative and supervisory staff.

Today we wouldn't change it! Daily staff meetings provide daily accountability for every area of the TB Bureau. This 30- to 60-minute period has become the most important part of the day. It is the fastest and most efficient way for staff to share pertinent information, discuss nonadherent patients and clinic issues, distribute assignments, brainstorm solutions to specific issues, propose new ideas, and implement new plans. This meeting also allows staff to triage and troubleshoot issues that impede achievement of objectives.

Meeting Scenario - How many patients missed DOT doses yesterday? Not last week, not last month! Who missed a DOT dose, why did they miss it, what are the plans to make up the missed doses today? Was a visit made on Saturday or Sunday to make up the missed dose? Which new suspects and cases were not started on DOT? Which new cases or suspects who were interviewed yesterday require expanded contact investigation at school or work sites? Which patients are nonadherent to TB services? All staff contribute ideas toward a comprehensive solution. Staff leave the meeting committed to the final negotiated group decision and ready to support it. This allows alternative plans to be

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implemented immediately and to impact outcomes. This is real-time case management.

The More, the Better - This daily meeting fosters more individual and collective accountability, more sharing of information, more collaboration, and more creative problem-solving, which result in more and improved services, using the same resources.

Take Care of Today, and Tomorrow Will Take Care of Itself - Daily accountability pushes higher daily achievement of objectives. The daily check-in by each field staff member provides daily verification that each DOT dose is successfully supervised, contacts are identified and examined, and nonadherent patients are located and returned to supervision. This results in no surprises. Monthly, quarterly, and annual outcomes are known.

Contact Investigation: Divide and Strengthen - Traditionally, contact investigation was initiated

by assigning each new patient or suspect to a field staff member. The staff member would conduct an initial interview with the patient or suspect and proceed to locate each of the contacts identified. Tuberculin skin tests (TSTs) were administered and read in the field and referrals were given to those contacts in need of further medical evaluation. Staff traveled over large geographic areas in heavy traffic to locate all the named contacts. Caseloads exceeded 150 at any given time, and staff spent more than half their time in the office reviewing patient or suspect files to determine which contact needed what and to plan visits for the day. Interviews were not being initiated within 3 days of assignment because of conflicting priorities. When staff returned to read TSTs, they had to make additional visits later the same day if some of the contacts were not available for the reading, thus interrupting other visits planned for that day. How can you achieve objectives within specified time frames when the same staff provide activities that compete for priority: interviewing versus tuberculin testing and patient evaluation? The solution was to separate the responsibilities into an Interview Team and a Follow-up Team and dispatch assignments to the Follow-up Team.

Two public health investigators (PHIs) assigned to the Interview Team now ensure that all new patients and suspects are interviewed within 3 to 7 days of assignment. These PHIs are also responsible for reinterviewing patients whose contacts have a high rate of TST-positive reactions, whose bacteriology results remain positive more than 3 months, or who develop positive bacteriology results after initial conversion.

With the dispatch system, all named contacts are included in a master database file. The CI Coordinator prioritizes the need to evaluate each contact based on the date of contact interview, infectiousness of index case, age of contact, and positive reactor rate for the contact cohort of

each index case. Individual contacts are assigned to the Follow-up Team by geographic location rather than by case cohort. This system increases productivity by reducing the number of miles and driving time. A computer-generated itinerary and the corresponding Contact Evaluation and Treatment forms are dispatched daily to each PHI. This system allows field staff to provide services to the highest priority contacts for the day. The supervisor conducts a daily review with each worker to assess the outcome of work dispatched. This process provides a high degree of accountability and facilitates rapid assessment and development of alternative plans for contacts not completing examination according to the recommended schedule.

The Computer Works for You - In addition to holding daily staff meetings and redesigning the way contact investigation services are provided, we have also recently redesigned the information-delivery system to provide integrated, real-time, accurate data on which to base daily patient-care decisions. A readily accessible computer team, knowledgeable about TB and the interrelation of program components, rapidly responds to changing needs by tailoring the information-delivery system. This dynamic system has become an essential tool used by all staff throughout the program. Supervisors and managers collaborate with the computer team to facilitate this process, which ensures a user-friendly system that requires minimal training. The electronic Case Register card, DOT adherence report, DOT medication card, and contact evaluation and treatment tracking form ensure accurate patient tracking and adherence. The use of computer-generated field staff itineraries assists in monitoring and ensuring daily individual staff accountability.

The Rewards - Accountability, daily staff meetings, separation of contact investigation interview and follow-up teams, and contact investigation dispatch, combined with a very usable information delivery system, have been

instrumental in pushing staff performance and achievement to a higher level.

The Achievements

- The percentage of patients started on DOT increased annually from 88.8% in 1998 to 97.6% in 2003.
- The percentage of suspects started on DOT increased annually from 84.4% in 1998 to 99% in 2003.
- A DOT success rate of 93% to 95% is consistently maintained annually.
- The percentage of isolates with drug-susceptibility results was maintained at 93% to 98% annually during the last 5 years.
- The percentage of patients and suspects interviewed within 3 days of assignment increased from 45% to 79% since division of the interview and follow-up teams in 2003.
- The percentage of time spent in the field providing direct contact investigation services increased from 52% to 67% since implementation of the dispatch system in September 2001.

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LTBI Program Implementation in a Substance Abuse Treatment Facility

Background: To accelerate the decline of TB in the United States, TB programs will need to strengthen targeted TB testing and treatment of latent TB infection (LTBI) efforts in high-incidence communities with high-risk populations. Substance abusers are at increased risk of developing TB, and in many poor, urban communities they contribute substantially to the annual incidence of disease. Staff of the New Jersey Medical School National TB Center (NTBC) reviewed the files of 357 persons reported with TB from 1999 to 2001 in Essex County, New Jersey. Their review revealed that

26% were HIV infected and 26% had a history of substance abuse in the past year. Using an expanded history intake form to ask TB patients about previous encounters with the health care system,¹ NTBC learned that many newly reported TB patients had been clients of substance abuse treatment facilities (SATFs) prior to TB diagnosis. Subsequently, NTBC sent a *Facility TB Profile*² questionnaire to health care facilities serving clients at high risk of developing TB disease. The responding methadone SATFs in Essex County reported that they (1) served clients with high levels of LTBI (24%), HIV infection (18%), and injection drug use (31%); (2) had physician and nursing staff on site; (3) referred clients with documented LTBI to the local health department for follow-up; and (4) were aware of neither the follow-up TB evaluation results nor of whether treatment for LTBI had been initiated. Applying a mathematical model to the *Facility TB Profile* data, NTBC determined that a large number of TB cases could potentially be prevented through strengthened TB testing and treatment of LTBI in Essex County methadone facilities.

As a result, NTBC collaborated with the New Jersey State TB Program in a project to develop and implement procedures for carrying out onsite TB testing and treatment for LTBI in a pilot SATF. The goal is to increase the numbers of high-risk clients who start and remain adherent with treatment for LTBI. This pilot project is ongoing, with some valuable lessons learned even from start-up.

Methods/Needs Assessment: Using Facility TB Profile data as an entry or discussion point, NTBC and state TB program staff held follow-up discussions with staff of selected SATFs and local health departments to determine barriers to the initiation and completion of therapy for LTBI among SATF clients. Subsequently, a detailed needs assessment was conducted in one SATF whose medical director was willing to explore innovative approaches without additional funding. The needs assessment included reviews of

client characteristics, of the initial medical screening, and of current TB follow-up procedures and problems. Following this, a collaborative plan was developed to (1) increase the number of clients who started and completed treatment among those infected with *M. tuberculosis*, (2) address the barriers found in the needs assessment, (3) collect data to document results, and (4) serve as a template that could be adapted by other health facilities.

The needs assessment determined that this SATF serves about 200 clients who receive daily methadone; about 45% have been in the program for at least one year. Most clients were of minority race or ethnicity (70% black and 20% Hispanic), 60% were medically indigent, and another 25% were Medicaid eligible. About 45% were injection drug users (IDUs), 15%-20% had LTBI, 10% had HIV infection, and 20%-30% had hepatitis C.

Upon admission to the SATF, the medical screening that a client would normally receive included (1) a physical examination, (2) blood chemistry work-up (including liver function tests [LFTs], complete blood count, urine analysis, RPR, and drug screening), (3) HIV counseling and testing, and (4) a Mantoux tuberculin skin test (TST), unless the client could produce written documentation of a prior positive TST result. We learned that although many clients give a verbal history of a prior positive TST result, few can produce written documentation; hence the TST is repeated.

A client with a positive TST result would then be referred to one of four health departments, depending on the client's place of residence. The local health department would refer the client to a local radiologist or hospital for a chest radiograph or x-ray (CXR). When the client returned, the health department chest clinic physician would evaluate the client for TB disease and for treatment of LTBI, including LFTs, because of the risk for liver disease. If started on treatment for

LTBI, the client would return monthly to the health department to pick up medication and to be monitored for toxicity. All medication was dispensed to clients for self-administration.

Several problems were found with these procedures:

- Clients giving a verbal history of a prior positive TST result (but no documentation) had to be retested.
- It was time-consuming and confusing for clients to be referred to different facilities for follow-up CXR, medical evaluation, and treatment.
- There were often delays in clients getting an appointment at the health department after the CXR was taken.
- Health departments were not consistent about starting treatment for LTBI.
- Health departments repeated the LFTs, even though they had already been done by the SATF.
- Patients often failed to keep their monthly LTBI treatment appointments at the health department.
- Clients were often not adherent with their self-administered medication.
- Medical information (especially treatment results) was not shared with SATF staff.

Intervention: To address these problems, NTBC and state TB program staff collaborated with the SATF and local health department staff to develop revised procedures, in an attempt to achieve the following objectives:

- 95% of new clients will have a documented TST result.
- 90% of persons with LTBI will be placed on treatment, unless contraindicated.
- 90% of persons started on treatment will complete therapy.

In the revised procedure, all clients with a documented positive TST result are given a voucher for a CXR at a single nearby radiology facility. The local health department pays for the

CXR, even if the client resides outside the local jurisdiction. The radiologist faxes the CXR reading to the SATF medical director, who then evaluates the client for TB or LTBI without delay. If the CXR is abnormal or if TB symptoms are present, the client is referred to the NTBC chest clinic for further evaluation and treatment of TB disease. If TB disease is ruled out, the SATF physician immediately starts treatment for LTBI, unless contraindicated. Since the LFTs were done on admission, they do not have to be repeated before therapy is initiated. At the same time that the client receives methadone, the SATF nurse directly observes daily LTBI treatment onsite and monitors the client for adverse reactions. Consequently, adherence to the medication is ensured and treatment efficacy is maximized. SATF staff are encouraged to call specific NTBC Chest Clinic staff with any questions or problems. At the completion of therapy, SATF staff give the client a wallet-sized *LTBI card*, which reflects the TST, CXR, and treatment regimen and completion, so these will not be repeated by other health care providers. SATF staff record TB risk-factor data, as well as TST, CXR, and treatment results, on a *Tuberculosis Testing, Follow-Up, and Treatment of LTBI Form (LTBI Form)*. This form provides a single document on which to record clinical and program evaluation data.

Conclusion and Lessons Learned: Persons with TB and their contacts remain the highest priorities for health department TB programs. With limited resources, health department LTBI efforts should focus on building capacity in other health care entities serving high-risk clients. We have demonstrated that this can be done, even without additional resources. Keys to the success of this effort included the following:

- The facility served clients with a high prevalence of LTBI and risk factors for developing TB disease (i.e., HIV and IDU).
- The facility had a medical staff to manage clients with LTBI.

- The facility medical director was committed to the success of the program.
- A needs assessment was conducted to determine problems and barriers to success.
- A written plan was developed by all parties involved in its implementation. The plan included objectives, procedures (with clear delineation of responsibilities), and a method of evaluation.
- The facility and health department each assigned a lead individual to oversee the project.
- A single nearby location was selected to which all clients with LTBI were referred for CXR. The local health department was willing to pay for all the CXRs, regardless of the clients' areas of residence.
- Methods were implemented to ensure adherence with LTBI treatment (i.e., DOT when client receives methadone).
- A single form was used for collecting clinical and program evaluation data.

These procedures were fully implemented in April 2004. Following 6 months' experience, the NTBC will evaluate the project with regard to carrying out the procedures and achieving the objectives. Subsequently, we will more fully document the planning and implementation process, develop a detailed report of the experience and lessons learned, and post the report on NTBC's website.

—Submitted by Chris Hayden, MPH, Consultant,
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Missouri's TB Awareness Fortnight

For more than 15 years, the State of Missouri has declared the last 2 weeks in March TB Awareness Fortnight in honor of World TB Day. In March 2004, a coalition of Missouri health care organizations again sponsored an education blitz throughout the state to heighten public awareness about TB and to provide TB education opportunities for health care professionals.

Research continues to show that repeated efforts to educate health care professionals regarding TB protocols are needed: Rao, Iademarco, Fraser, and Kollef (1999) found delays in initial suspicion of TB and in initiation of treatment in St. Louis-area hospitals, illustrating a need for improved education of physicians about the benefits of early initiation of TB therapy.

A 2002 survey that assessed training needs of Missouri public health nurses found two areas of concern: knowledge of TB control and treatment, and state policies and procedures. Another finding was that 78% of survey participants devoted less than 25% of their nursing time to TB. As Missouri's TB incidence continues to drop, public health nurses will have even less experience with TB. The study's recommendation was to continue educational experiences for health care professionals so as to maintain TB nurse consulting and case management expertise at the state and district level (Libbus, Phillips, and Benjakul, 2003).

A preventable-case analysis conducted by the Missouri Department of Health and Senior Services showed that Missouri had 68 preventable cases of active TB in 2002 and 73 cases in 2003, nearly half the total number of cases in the state. The majority of preventable cases (85%) involved a missed opportunity to screen patients with risk factors, such as previous contact to TB cases, foreign-born persons, or those having other medical or social

risks. Designers of the study concluded that physicians in Missouri need to be continually reminded of risk factors for TB and to screen and prescribe treatment for those at risk (Phillips and Tomlinson, 2003).

With 131 reported TB cases in Missouri for 2003 (down only 5 cases from 136 in 2002), it is evident that TB rates are not declining fast enough. History shows us that being lax in treatment efforts can easily promote a resurgence of the disease. Amid decreases in federal, state, and local public health funding, new and exotic diseases getting disproportionate publicity, and the public's belief that TB is a disease of the past, Missouri struggles to keep TB on the minds of health care providers. One of the state's strategies is to hold educational programs during TB Awareness Fortnight. During this 2-week period, health care professionals are updated on the latest TB data and treatment strategies and encouraged to continue their perseverance in pursuit of Missouri's 2010 TB elimination goal. For 2004, the American Lung Association of Missouri (ALAM) and the Missouri Department of Health and Senior Services (MDHSS) set a goal of organizing three TB seminars around the state with at least 30 participants per location. The objectives for seminar attendees were as follows:

- Increase knowledge of the most up-to-date information regarding TB infection, treatment, directly observed therapy (DOT), prevention, and statistics.
- Be aware of programs and services available through ALAM and MDHSS to assist in the diagnosis and treatment of TB.
- Be able to list risk factors for TB transmission, and gain basic knowledge of TB disease and infection.
- Be able to describe TB trends in the United States, and list cultural considerations when working with foreign-born persons.
- Meet present participation goals for seminars, as evidenced by posttest score means above 90%.

The 2004 goal of three seminars with at least 30 participants each eventually grew to six seminars averaging audiences of more than 50 participants, led by distinguished presenters with statewide and national reputations. Seminar topics and speakers included the following:

Missouri Rehabilitation Center (MRC), Mt. Vernon, March 17:

TB Infection, Diana Fortune, RN, BSN
History of TB, Dr. Ronald Williams (Chief Medical Officer, Missouri Rehabilitation Center)

Association for Professionals in Infection Control and Epidemiology (APIC) Meeting, St. Louis, March 18:

TB Outbreak - City of St. Louis Homeless Shelters, Lynelle Phillips, RN, MPH (CDC Public Health Advisor, MDHSS), and Ted Misselbeck (CDC Public Health Advisor, St. Louis City Department of Public Health)

St. Louis County, March 19:

TB Infections & Treatment with Emphasis on the Foreign-born and Homeless, Lynelle Phillips, RN, MPH (CDC PHA, MDHSS)
Managing TB in Homeless Shelters, St. Louis Area Statistics, Ted Misselbeck, MA (CDC PHA, St. Louis City Department of Health)
How DHSS Can Help You, David Oeser (Health Program Representative, MDHSS)
TB Screening & Testing for Pre-Employment, Jenelle Leighton, RN (St. Louis County Department of Health)
TB Disease, Risk Factors, and New Guidelines, Thomas Bailey, MD, FACP (Associate Professor of Medicine, Washington University School of Medicine, Medical Director of TB Control, St. Louis County Department of Health)
ALAM Programs & Services, Vicki Tomko, RN, BS (ALAM)

Cape Girardeau, March 23:

TB in Missouri—Disease Treatment Recommendations, Philip LoBue, MD (Team

Leader, Medical Consultation Team, CDC Division of TB Elimination)

TB Transmission, Lynelle Phillips, RN, MPH (CDC PHA, MDHSS)

DHSS Services/ALAM Services & Programs, David Oeser (Health Program Representative, MDHSS)

TB Disease and Risk Factors, Theodore Grieshop, MD (Internal Medicine and Infectious Disease)

Pre-Employment Testing and Screening, Lynn Tennison, RN (TB Control Nurse, Missouri Pulmonary Medicine and Infectious Diseases, University of Colorado School of Medicine)

Grand Rounds, St. Louis, March 25:

Diagnosis and Treatment of Multidrug-Resistant TB, Dr. Michael Iseman (Girard and Madeline Beno Chair in Mycobacterial Diseases; Chief, Clinical Mycobacteriology Service in the Mycobacterial Disease Division, National Jewish Medical Research Center; Professor of Pulmonary Medicine and Infectious Disease, University of Colorado School of Medicine)

Kansas City Metro Coalition, March 26:

Prevalence of Incidence Trends; Special Consideration in Diagnosis and Treatment, Dr. Ram Koppaka (CDC Division of Global Migration and Quarantine, Atlanta, Georgia)

Cultural Considerations in the Foreign-born, Lynelle Phillips, RN, MPH (CDC PHA, MDHSS)

Identifying and Treating LTBI/INH Side Effects, Garold O. Minns, MD (Professor of Medicine, Department of Internal Medicine, University of Kansas School of Medicine, Wichita; Advisory Physician to Sedgwick County Health Department TB Program)

Identifying Active TB and Common Mistakes in Diagnosis, Dennis Pyszczynski, MD, FCCP (University of Missouri School of Medicine, Kansas City; Advisory Physician to the KC Metro TB Coalition)

A total of 519 health care providers who work or have an interest in TB attended the six sessions

presented during TB Awareness Fortnight. Nurses with RN degrees or credentials of advanced practice represented more than 52% of the participants, the majority coming from the public health field; physicians made up another 35%. Microbiologists, social workers, epidemiologists, LPNs, and students filled out the remaining participant lists. Evaluations from the Fortnight conference revealed that participants felt each seminar reached its objectives of heightening TB awareness and providing needed educational opportunities for health care professionals. Speaker presentation ratings averaged 4.7 out of 5.0. Participant comments ranged from praises for the excellent speakers to appreciation for the relevancy of the information. Participants cited TB screening, testing, and transmission as the most useful topics covered in the seminars. Topics requested for future TB Awareness Fortnight seminars centered around administration and reading of PPD skin tests, especially questionable readings. Pretest assessments of general TB knowledge among 2004 Fortnight participants had shown a mean correct score of 64.2%; particularly satisfying to organizers was the average posttest score of 93.3%. As Missouri lowers its reported TB case numbers for yet another year, plans begin for next year's TB Awareness Fortnight to again re-educate the state's health care professionals, as Missouri strives toward meeting its goal of TB elimination by 2010.

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The following is a summary of a recently published article: Winthrop KL, Albridge K, South D, et al. The clinical management and outcome of nail salon-acquired *Mycobacterium fortuitum* skin infection. *Clinical Infectious Diseases* 2004;38:38-44.

The Clinical Management and Outcome of Nail Salon–Acquired *Mycobacterium fortuitum* Skin Infections

Mycobacterium fortuitum is one of several rapidly growing, nontuberculous mycobacteria (NTM) that are ubiquitous in soil and water habitats [1-5]. These mycobacteria usually cause cutaneous infections in association with trauma or clinical procedures, but are also known to cause pulmonary or disseminated disease [6]. Recently, we documented a large outbreak of community-acquired infections at a nail salon in California, where over 115 patrons contracted severe, lower-extremity *M. fortuitum* furunculosis (skin boils) [7]. The infections were traced to a series of contaminated whirlpool footbaths used in the salon as part of the pedicure procedure. Since recognition of this outbreak, additional outbreaks and similar sporadic cases of disease have been reported from around the country [7-9]. Because these whirlpool footbath-associated infections have only recently been described, their optimal clinical management is unclear. To better understand the clinical and diagnostic features of these infections, we observed the clinical course of a subset (n=62) of patients found during the outbreak investigation.

We asked physicians of patients to complete a standardized questionnaire that gathered clinical

details from each patient; details included medical history, treatment regimen, duration of clinically evident infection, and disease outcome. No attempt was made to modify or influence treatment length or choice among treating physicians, since the study was observational in nature.

Patients receiving antibiotics against mycobacteria for at least 2 weeks were considered treated. Patients receiving no antibiotic treatment, treatment with antibiotics typically not known to have *in-vitro* activity against mycobacteria, or treatment with antibiotics with activity against mycobacteria for less than 2 weeks were considered untreated. Univariate and multivariate analyses were conducted to detect relationships between disease duration and variables that could potentially influence that duration.

Follow-up information was available for 61 of 62 patients; 60 (98%) were female. Patient ages ranged from 13 to 53 years. No persons were immunocompromised; three were pregnant at the time of infection. Patients had a median of two boils each (range 1-20). All lesions were below the knee in a distribution pattern corresponding to water exposure from the whirlpool footbaths used during the pedicure procedure. The clinical appearance and progression of the lesions in this outbreak were strikingly uniform. Lesions typically first appeared as small papules (similar to spider bites in appearance) and later progressed to large fluctuant boils, with subsequent ulceration and scarring.

Of the 61 patients, 48 received antibiotic therapy and 13 were untreated. No persons required surgical resection of lesions. All treated and untreated persons eventually had resolution of disease. One initially untreated, HIV-negative person was given antibiotic therapy after lymphatic dissemination of infection and the development of a large intra-thigh abscess that

required drainage and was later found culture-positive for *M. fortuitum*.

Overall, the mean disease duration was 170 days (range 41–336). Persons treated with antibiotics were treated for a mean of 4 months (range 1–6). Clinicians most frequently used doxycycline or minocycline alone, or in combination with ciprofloxacin. Isolates were generally susceptible to amikacin, cefoxitin, ciprofloxacin, doxycycline, gentamicin, and minocycline, and resistant to sulfa, clarithromycin, and azithromycin. Persons with culture-negative disease and those with fewer lesions had significantly shorter disease durations. A final, multivariable linear regression model controlling for these and other effects indicated that antibiotic treatment was associated with shorter disease duration only when initiated early in the disease course (in first 9 weeks after disease onset) in persons with extensive disease (multiple boils).

In summary, this was the first study to document the natural history of treated and untreated *M. fortuitum* furunculosis. Since this initial California outbreak, it has become apparent that such nail salon-associated NTM infections are more widespread than previously known. Importantly, while surgical resection of lesions has been reported by other authors in the treatment of cutaneous infections caused by rapidly growing NTM [8,10], our experience indicated that oral antibiotic therapy alone may be sufficient in treating these nail salon-acquired *M. fortuitum* infections and that surgical resection is not necessary. Our data suggested that persons with more extensive disease (more than one boil) who initiate antibiotic therapy early in their disease course benefit most from therapy. Although untreated infection may be self-limited, we found that dissemination of these infections can occur in healthy individuals, and we recommend that persons who go untreated should be followed closely to assess for such complications.

—Reported by Kevin Winthrop, MD
California Dept of Health Services PHA

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Foreign-Nation TB Information Packets Prove Useful for New Hampshire Patients and Staff Members

The proportion of U.S. TB cases occurring in foreign-born persons has steadily increased since the mid-1980s. The State of New Hampshire (NH) has shown a similar trend. In 2003, 85% (13/15) of the state's active cases and 77% (606/786) of latent TB infections occurred in foreign-born persons.

The NH TB program is responsible for the detection and proper treatment of persons with TB. The program is staffed by a Program Coordinator, a Medical Secretary, a Latent TB Infection Coordinator, and a part-time TB Controller, with seven Disease Control Public Health Nurses (PHNs) available on an as-needed basis. TB services in the two largest NH cities, Manchester and Nashua, are provided through contractual arrangements with these cities' health departments. In the past, TB staff members have expressed frustration with their lack of knowledge about specific countries, cultures, and health beliefs, as well as with the lack of patient-friendly education materials that could help them address patient concerns in foreign-born populations.

A series of focus groups were conducted among staff to determine cultural and linguistic barriers to effective TB prevention and treatment. A consistent theme was that staff members wanted to know about the foreign countries from which their clients came. In particular, they wanted to better understand health care practices, family and social values, religious beliefs, and languages spoken. Staff reported that their patients' limited or nonexistent English language skills made it difficult to determine the patients' understanding about what causes TB, how it is transmitted, and how it is treated. TB staff also believed they needed to better understand patients' perceptions of the burden of TB and its risk potential, in their home countries as well as in the United States. As a result of these findings, NH TB program staff developed TB informational packets about frequently seen countries of origin, with information for staff as well as for patients. When a new foreign-born patient is reported to the TB program, a TB information packet on his or her country is made available to the PHN who will be managing the case. Patient information is tailored to meet an individual patient's needs and assumes the patient has some command of the English language. The PHN can select specific pieces to give to a patient during visits,

recognizing that not all patients require the same level of education.

In general, each packet contains the following information:

For patients-

- General patient information regarding TB disease and latent TB infection
- Educational materials in the patient's language

<http://www.findtbresources.org/scripts/index.cfm>

- TB news articles reported in the home-country newspaper

For staff-

- Educational information about a country's cultural and health-related beliefs

<http://ethnomed.org/>

<http://memory.loc.gov/frd/cs/cshome.html>

<http://www.cia.gov/cia/publications/factbook/>

<http://www.culturalorientation.net/fact.html>

- WHO-estimated TB incidence data
http://www.who.int/gtb/publications/globrep02/download_full_Report.html
- CDC annual surveillance data, *Reported Tuberculosis in the United States*
- TB cases in foreign-born persons by country of origin
- TB case rates in U.S.-born vs. foreign-born persons
- Length of U.S. residence prior to TB diagnosis
- Countries of birth for foreign-born persons reported with TB

<http://www.cdc.gov/nchstp/tb/surv/surv2002/default.htm>

The packets can be duplicated by other TB control programs, and packet content is limited only by a TB program staff's imagination. Needed material can be compiled from numerous sources. New Hampshire's packets include CDC's yearly surveillance publication, *Reported Tuberculosis in the United States*. This provides statistical information displayed in charts and graphs that clearly demonstrate U.S. TB cases in

foreign-born persons by country of origin, the prevalence of TB in foreign-born persons over time, and the length of residence in the United States prior to diagnosis. Our packets also include translated educational materials to enhance patient comprehension and understanding. The CDC's *Tuberculosis Education and Training Resource Guide* as well as various state public health department web sites are excellent resources for translated brochures and pamphlets on subjects such as the Mantoux skin test, TB infection and disease, TB and HIV coinfection, and medications. Information on cultural traditions, religious beliefs, and health care practices that empower TB programs to work more effectively in cross-cultural situations may be found online.

Acclimating to a new country and to what may seem to be strange health care practices can be frightening to newly arrived immigrants. News from home is always welcome. Articles about TB, as reported in home-country newspapers, may be the key to convincing foreign-born persons with TB disease or *M. tuberculosis* infection of the gravity of their diagnosis and the need for starting and finishing treatment. A simple *Google* search (www.google.com), entering "newspapers in (foreign country of interest)" will provide links to a variety of newspapers published in a particular country. Most newspapers have a search key. Typing in the word "tuberculosis" will display current articles on TB activities. If a TB program has an interpreter on staff who can verify article content, then articles written in different languages may be used. Otherwise, many of the newspapers published in other countries are in English and can be useful for those patients who do speak English.

As the proportion of TB in foreign-born persons increases, TB program staff in the United States are increasingly challenged to work with unfamiliar populations. Having readily available culturally-oriented TB education packets helps staff understand their patients and equips staff

with the information they need to convince foreign-born patients about the seriousness of TB and to encourage them to start and complete treatment.

—Submitted by Dianne Donovan
New Hampshire TB Program

EIS Conference a Success for DTBE

The 53rd annual Epidemic Intelligence Service (EIS) Conference was held in Atlanta April 19-23, 2004. Every year this conference serves as a robust mix of scientific presentations by current EIS Officers and recruitment activities for the incoming class of EIS Officers. Members of the incoming class spend the week meeting with representatives of programs throughout CDC, interviewing with programs that interest them, and then being matched to a program for their 2-year assignment. This year's class consists of 89 EIS Officers.

Every year, DTBE actively promotes the work of its current EIS Officers and recruits from the new class. This year's conference was a big success on both counts for DTBE.

DTBE Director Ken Castro, MD, moderated this year's TB presentation session, "Consumption Junction: Tuberculosis Investigations." The session was well attended and included five presentations on some of the TB-related epidemiologic investigations that were conducted recently in collaboration with our TB control partners in state and local health departments.

- Victoria Gammino, PhD, DTBE's EIS Officer in the Field Services and Evaluation Branch, discussed the investigation she led on a TB outbreak in a homeless population in Maine in 2002-2003.
- Renee Funk, MD, an EIS Officer assigned to the state of Kansas, presented on the investigation she led in 2003 related to cross-contamination caused by micropipettor use in a mycobacteriology laboratory in Kansas.

- Fatima Coronado, MD, an EIS Officer assigned to the state of New York, reported on an outbreak in a large homeless shelter in New York in 2003.
- Asim Jani, MD, an EIS Officer assigned to the Commonwealth of Virginia, presented on a pseudo-outbreak of tuberculin skin test conversions in a women's prison in Virginia in 2003.
- John Oeltmann, MD, DTBE's EIS Officer in the Surveillance, Epidemiology, and Outbreak Investigations Branch (SEOIB), closed the session with his presentation on how the use of TB genotyping led to the discovery and understanding of transmission among homeless persons and illicit-drug users in Kansas in 2002-2003.

In the meeting's recruitment activities, DTBE was successful in matching three new EIS Officers to assignments in the Division. Our new Officers arrived in August 2004 and join Drs. Alyssa Finlay, John Oeltmann, and Kathrine Tan to give the Division six EIS Officers. Our new EIS Officers are as follows (please see the Personnel Notes section for further details on their careers):

- Rana Jawad Asghar, MD, MPH, (goes by "Jawad") is assigned to SEOIB. He is a medical doctor with an MPH from the University of Washington, where he was also a fellow in emerging infectious diseases.
- Kevin Cain, MD, is assigned to the International Research and Programs Branch (IRPB). Kevin is a medical doctor in internal medicine.
- N. Sarita Shah, MD, MPH, assigned to IRPB, is a medical doctor, and is receiving her MPH from Columbia University.

DTBE also has two EIS Officers who have finished their 2-year assignments with us. We are grateful to Drs. Victoria Gammino and Abe Miranda for their hard work on behalf of our Division. Both Abe and Victoria have made tremendous contributions to national and

international TB control during their 2 years as EIS Officers.

During EIS, Abe provided in-country technical assistance to the Viet Nam National TB Program and the Honduras National TB Program for operational research on TB, and served as the principal investigator for (1) an evaluation of the Brazilian national TB surveillance system, (2) a case-control study of risk factors for treatment default among TB patients in South Africa, and (3) an evaluation of the impact of antiretroviral treatment on the incidence of TB in Brazil, 1995-2001. In July, Abe will join the Care and Treatment Branch in CDC's Global AIDS Program. In this position, he will be developing comprehensive care and treatment protocols and addressing epidemiological and operations research questions specifically related to TB in the countries of the President's Emergency Plan For AIDS Relief.

Victoria's projects during EIS included collaborating on a contact investigation of TB in a traveling circus; evaluating TB surveillance among foreign-born persons in New York City; and serving as the principal investigator for (1) a contact investigation of MDR TB in a high school, (2) a community survey for active TB and LTBI on a remote atoll in the Republic of the Marshall Islands, and (3) an outbreak among homeless persons in Portland, Maine. Victoria is currently working with IRPB and the World Health Organization to collect evidence on which to base a global policy for MDR TB control, including treatment and management, and is developing an information management system to allow data to be compared across different sites implementing MDR TB control programs. Victoria will continue working on this project within IRPB for the next 6 months to 1 year.

—Contributed by Kayla Laserson (IRPB)
and Scott McCombs (SEOIB)
Div of TB Elimination

Tuberculosis and Civic Learning

On January 21, 2004, faculty, deans, provosts, and other academic officers representing colleges and universities from across the nation learned about TB at a one-day symposium, "Journey Towards Democracy: Power, Voice, and the Public Good," that preceded the 2004 annual meeting of the Association of American Colleges & Universities. In a panel discussion titled "Using the Interpretive Lens of the Disciplines for Civic Learning," Dr. Richard Fluck, speaking for the disciplines of science, told the audience about TB and described his multidisciplinary courses about TB.

Fluck told the audience that his courses connect science and civic engagement by teaching through a complex public issue—the global TB epidemic—to basic science. He concluded his remarks by saying, "My students and I have learned that we must have the tools science has given us if we hope to tackle TB. We've learned too that we could do a better job if science gave us better tools: new diagnostic tools, more effective drugs, and an effective vaccine. But we've learned more than that. We've learned that it's not enough just to have an effective treatment for TB; the treatment actually has to reach sick people." Thus, tackling TB is not only about science but is also about advocacy, political will, and public policy.

The full text of Fluck's remarks can be found at the Web site <http://www.sencer.net/resource.cfm>.

—Submitted by *Richard A. Fluck, PhD*
Dept. of Biology
Franklin & Marshall College
Lancaster, Pennsylvania

Information on Safer Medical Devices for Placing the Tuberculin Skin Test

The Mantoux tuberculin skin test (TST), which detects *M. tuberculosis* infection, is administered by needle and thus can result in health care

workers receiving needlestick injuries. In 2001, when the Needlestick Safety and Prevention Act was passed, the Occupational Safety and Health Administration (OSHA) revised the Bloodborne Pathogens standard to require that employers select and use effective and safer medical devices to protect health care workers from contaminated-sharps injuries and to reduce occupational exposure to bloodborne diseases. The 2001 Act requires health care employers to document in their exposure control plans that they have evaluated and implemented safety-engineered sharp devices and needleless systems. In 2003, CDC produced the Mantoux TST Training Materials Kit for use in training health care workers to administer the Mantoux TST and interpret the reaction.

Syringe and needle technologies that help prevent needlestick injuries have been evolving and continue to do so. Any medical device designed to administer the TST should meet specific criteria for placing the TST accurately or should address these criteria through the design of the device. DTBE undertook a project that involved gathering information on the current and future availability of safe medical devices for placing TSTs. The objective of this effort was to assist in developing a resource document, to be shared with TB programs, that lists the safer medical devices that meet the design criteria.

CDC located 26 needle manufacturers by Internet search and sent information to the manufacturers in a letter highlighting the procedures for placing an accurate Mantoux TST. The needle manufacturers were invited to share information on their existing or planned safer medical devices for administering the TST and to describe how the criteria on the procedures list are or will be addressed by each medical device. All of the 26 manufacturers responded, with 16 indicating that they had no safety injection equipment and 10 replying that they had injection devices that met the criteria on the procedures list. In addition, third-generation

needleless jet injection devices, which currently are not FDA approved for the TST, have reportedly produced intradermal injections successfully.

We determined that medical devices that can be used in administering the standard TST and that incorporate needles with engineered sharps injury protection equipment are reportedly available from several manufacturers. DTBE has now developed a resource document that lists the available medical devices; it can be obtained by contacting Judy Gibson at jsgibson@cdc.gov. The use of safety injection device trade names and manufacturing companies is for identification and information only and does not imply endorsement by DTBE, CDC, or the National TB Nurse Consultant Coalition (NTNCC).

Presented at the NTCA meeting in June 2004.

—Submitted by Judy Gibson
Div of TB Elimination

National TB Nurse Consultant Coalition, June 2004

On Tuesday, June 8, 2004, members of the National TB Nurse Consultant Coalition (NTNCC) were joined by members of the National TB Controllers Association (NTCA) and CDC staff at the annual NTNCC Education Session; 78 persons attended. We missed those colleagues who were unable to join us because of funding cutbacks and travel restrictions.

This year our focus was “Nurses – Critical Partners in TB Elimination.” Denise O’Conner, former NTNCC member and current Nurse Manager of Winchester Hospital, Massachusetts, presented “Empowering Nurses to Tackle the Declining Knowledge of TB,” reminding us to anticipate change, monitor change, adapt quickly to change, and be ready to change again quickly (they keep moving the cheese). Carol Pozsik, TB Control Division Director of the South Carolina Department of Health and Environmental Control,

presented “Nurses As Advocates for Public Health;” provided examples of advocacy; and discussed education vs. lobbying, conflict of interest, and advocacy partners (national, state and local). Carol’s passion for advocacy spread to all of us, energizing us to return to our areas of work and to look for additional opportunities to advocate for public health. A panel discussion on Staffing Standards for Public Health Nurses was led by NTNCC President-elect Ellen Murray (Florida). Panel members Denise Dodge (Florida), Shea Rabley (South Carolina), and Lynelle Phillips (Missouri), who served as site leaders of the Staffing Standards Tools 2003 pilot test, shared their experiences in using the acuity tool and the workload analysis instrument.

A collaborative accomplishment for NTNCC this year was our poster submission. The poster presentation was one developed jointly by NTNCC and NTCA Staffing Standards Committee members to describe the tools and instruments that were used for this very important project. The poster discussed the acuity and workload analysis tools and the findings from all the areas that pilot tested the tools, and demonstrated the need for ensuring that the critical element of acuity levels in TB clients is measured and also that there are enough full-time employees to get the job done effectively. It also demonstrated that having time to perform core public health functions such as community education is very limited or even nonexistent for many nurses after caring for their clients.

We are proud of our NTNCC nursing staff and look forward to another year of continued collaboration and outstanding representation. The picture here represents only a few of our NTNCC nursing staff. We encourage all nurses who work with TB to join NTNCC and hope to have our numbers increased in 2005!

—Submitted by Lorena Jeske
Washington State Dept of Health
and Ellen Murray
Florida State Dept of Health



TB EDUCATION AND TRAINING NETWORK UPDATES

Member Highlight

Jo-Ann K. Arnold, BSN, MS, is a Nurse Consultant for the Florida Department of Health Bureau of Tuberculosis and Refugee Health. She received her BSN degree from the University of Maryland and her MS degree from the University of South Florida. Jo-Ann has been a member of the TB Education and Training Network (TB ETN) from the very beginning, having learned about it through an e-mail notification. She decided to attend the first workshop, which she found to be a wonderful experience. Jo-Ann joined TB ETN to network with other persons involved in health education, find out about new educational materials, learn new techniques for developing educational materials, and prepare better presentations.

Jo-Ann's job responsibilities consist of providing technical assistance statewide for County Health Departments (CHDs) and the private sector

throughout Florida regarding TB and nursing issues, as well as developing and providing educational presentations. In addition, she is the coordinator of the Florida TB Nurses Network (TNN), which holds monthly conference calls for CHD nurses and other TB nurses within Florida to discuss issues, concerns, and problems and to provide TB updates. She actively participates in the development and revision of TB program policies and guidelines, and develops and updates TB forms and educational materials. She is also the coordinator of the State of Florida TB Control Coalition, which meets quarterly. Members of that group are developing a Certification for TB Nurses working in Florida TB programs.

Most recently Jo-Ann developed a Case Management for TB Nurses training course and a Train-the-Trainer Tuberculin Skin Testing Certification Course, and assisted in developing a Contact Investigation Course.

In addition to Jo-Ann's busy work life, she also enjoys reading, especially mysteries; indoor and

outdoor gardening, which provides her with the fresh vegetables she loves; traveling (she is planning a vacation to Hawaii later this year); exercising, particularly swimming and walking; and cooking. And her versatility doesn't stop there; she is also the winner of the TB ETN Pin Design Contest! (See TB ETN Pin Contest article later in this section.)

Her hopes for the future are that TB ETN will continue to provide this valuable link between CDC and others in various cities, counties, states, countries, and other jurisdictions. She would like members to continue receiving information about new TB educational materials, having the chance to ask questions or voice concerns about what is happening worldwide as well as "in our own backyards," and receiving feedback from others who work with tuberculosis clients and face some of the same issues.

If you'd like to join Jo-Ann as a TB ETN member and take advantage of all TB ETN has to offer, please use the attached [form](#) or send an e-mail to tbetn@cdc.gov requesting a registration form. You can also send a request by fax to (404) 639-8960 or by mail to

TB ETN
CEBSB, Division of TB Elimination
CDC
1600 Clifton Rd., N.E., MS E10
Atlanta, Georgia 30333

If you would like additional information about the TB Education and Training Network, visit the website at <http://www.cdc.gov.nchstp/tb/TBETN/default.htm>.

—Reported by Regina Bess
Div of TB Elimination

Cultural Competency Subcommittee Update

The Cultural Competency Subcommittee of the TB ETN is composed of TB trainers and

educators who are passionate about cultural competency and its application to TB control activities. The goal of the Subcommittee is to promote cultural competency among members of TB ETN. The objectives are as follows:

- To identify resources in the area of cultural competency and make these available to TB ETN members
- To provide a forum through which TB ETN members can network with others in the area of cultural competency
- To promote the availability of the Cultural Competency Subcommittee as a resource for input on cultural and linguistic issues

If you are interested in joining this Subcommittee, please send an e-mail to tbetn@cdc.gov.

Since the last edition of *TB Notes*, the Cultural Competency Subcommittee has remained busy with two main projects. The first is the creation of an annotated collection of evaluation tools for assessing the cultural competency of TB-related educational materials. Toward this end, we have found 12 cultural competency evaluation tools. To facilitate objective, thorough, and relevant descriptions of these tools, we have developed and refined a standardized review form. The next steps will be to use the form to abstract the key features of each evaluation tool, and to make this information available to the TB ETN members at large in a format similar to the existing cultural competency resource list. As new cultural competency evaluation tools are found, they will be abstracted and added to the database. If you are aware of any evaluation tools for assessing the cultural competency of educational materials (particularly TB-related materials), please inform Heather Joseph (Hjoseph1@cdc.gov). Of course, suggestions about new materials (such as websites, articles, reports, assessment tools, and professional contacts) for inclusion in the general cultural competency resource list are also appreciated.

The second major focus of the Subcommittee was assisting in planning for the annual TB ETN conference. The Subcommittee members helped plan a plenary session and four break-out sessions addressing specific cultural competency topics and skills.

Cultural Competency Tip

Culture Clues™ are tip sheets for clinicians, designed to increase awareness about concepts and preferences of patients from diverse cultures. *Culture Clues™* should be used with information from the patient and family to guide communication and patient care. Every person is unique, so health care providers should always consider the individual's beliefs, needs, and concerns. This project of the University of Washington Medical Center is available online at <http://depts.washington.edu/pfes/cultureclues.html>

Culture Clues™ is a project of the Staff Development Workgroup, Patient and Family Education Committee, University of Washington Medical Center (1999).

—Submitted by David Park, MD
TB ETN Cultural Competency Subcommittee

TB ETN Pin Design Contest Winner

The TB ETN Communications and Membership Subcommittee had earlier launched a Pin Design Contest, and is pleased to announce that it has a winner! The subcommittee solicited artists from the TB ETN membership to submit designs that would promote TB ETN. The design specifications were to include "TB ETN" on the pin, distinguish "TB" and "ETN" from each other, keep the pin size to within that of a U.S. quarter, and emphasize the international nature of the TB ETN organization. There was a particular energy and excitement about the design contest in that it allowed for a great deal of creativity and artistic expression. We were very pleased and impressed by the numerous submissions and exciting ideas.

TB ETN is proud to announce that Jo-Ann K. Arnold, BSN, MS, is the winner of the contest. She is a Nurse Consultant for the Florida Department of Health Bureau of Tuberculosis and Refugee Health (see TB ETN Member Highlight section). Jo-Ann's design met and surpassed all of the design contest requirements and expectations. The design created an enthusiastic sense of the international unity of the TB ETN.

Many thanks to all who participated. It was a very difficult decision considering the many creative designs. We very much appreciate the obvious effort put into the creation of the designs. The pins were distributed to the TB ETN members at the annual TB ETN workshop, held August 11-13 in Atlanta.

—Reported by Regina Bess
Div of TB Elimination

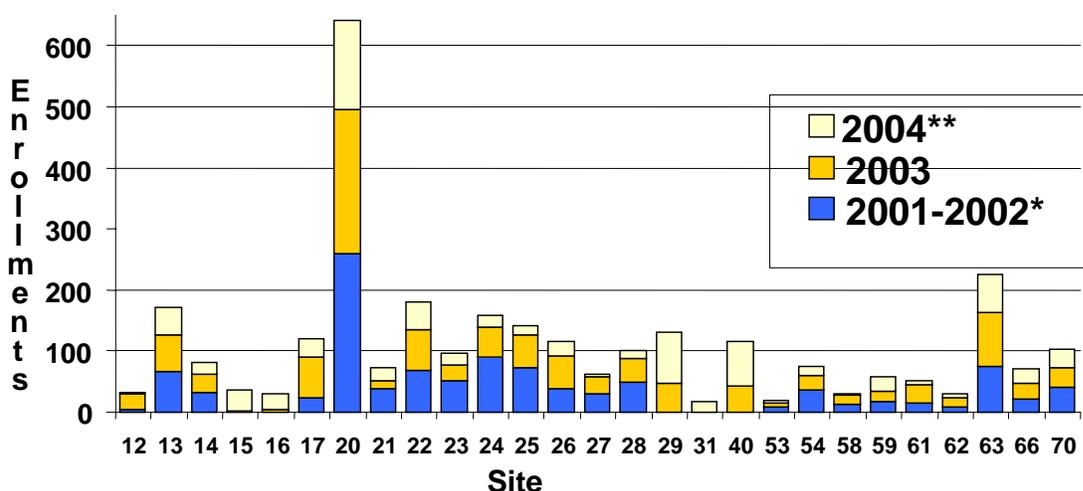
UPDATE FROM THE CLINICAL AND HEALTH SYSTEMS RESEARCH BRANCH

TB Trials Consortium Update

The Tuberculosis Trials Consortium (TBTC) had its 15th Semi-Annual Meeting May 21 and 22 in Orlando, Florida. The principal investigators, study coordinators, site monitors, and data and coordinating center staff of the TBTC have been meeting regularly since 1995, when the original research group started its first clinical trial in the newest series of USPHS clinical trials to study drugs for tuberculosis treatment. The mission of the TBTC is "... to conduct programmatically relevant clinical, laboratory, and epidemiologic research concerning the diagnosis, clinical management, and prevention of tuberculosis infection and disease," and as such the TBTC staff use these face-to-face meetings to review the newest ongoing or planned science projects for the TBTC. The TBTC's research agenda is

guided by a comprehensive review of the important unanswered questions in TB therapeutics and a determination of what studies are being done or are planned by other research groups, accomplished by prioritizing the important questions with input from TBTC members, DTBE staff, and staff of the Advisory Council for the Elimination of Tuberculosis (ACET).

Following is a chart of the number of patients enrolled (n=3,005) in Study 26 by May 21, 2004, FY 2001*-2004.** Total number needed = 8,000.



* Study 26 started June 2001 and thus FY 01 and 02 are combined.

**FY 04 up to 05/21/04. Sites 15, 16, 29, and 40 started Study 26 in FY 03, Site 31 in FY 04.

In addition to attendees from the TBTC Study Sites and the CDC-TBTC staff, the 15th Semi-Annual Meeting welcomed in attendance DTBE's Director, Dr. Ken Castro; DTBE's Associate Director for Science, Dr. Michael Iademarco; and the new Clinical and Health Systems Research Branch (CHSRB) Chief, Dr. Andy Vernon. Outside guests and speakers included Dr. Surjeel Choudhri (Bayer Pharmaceuticals); Dr. Mel Spiegelman (Global Alliance for TB Drug Development, GATB); Dr. Jeffrey Starke (Baylor University), addressing the issue of Research Priorities for Childhood Tuberculosis; Dr. Kevin

DeCock (CDC-GAP Director, Kenya Field Station), addressing the issue of Research Priorities for TB-HIV in Africa; Dr. Barbara Laughon (Chief, Complications and Co-Infections Research Branch, Therapeutics Research Program, Division of AIDS, NIAID, NIH); and Dr. Jose M. Miro (Hospital Clinic University, Spain), addressing the issue of Research Priorities for TB-HIV in Western Europe. Of note, Dr. Miro is also co-principal investigator of the TBTC site in Barcelona, Spain.

A few highlights from the 15th Semi-Annual Group Meeting:

- The Data Safety and Monitoring Board of the TBTC reviewed all TBTC clinical trials open for enrollment on May 5, 2004, and approved their continuation for one year
- Study 26, "A Study of the Effectiveness and Tolerability of Weekly Rifapentine and Isoniazid for Three Months Versus Daily Isoniazid for Nine Months for the Treatment of Latent Tuberculosis Infection," will migrate this summer from its current system of patient enrollment (by phone, with study site staff calling in to the CDC data center) to a study site web-based enrollment system
- All TBTC sites participated in or supported the "Race to Enroll 3,000 Study 26 Patients."

This fun event started January 23, 2004, when the group was challenged to enroll 518 new patients into Study 26 by May 21, 2004 (only 120 days!) and bring the total count of patients enrolled in this study to 3,000. The race participants received enrollment updates and encouragement every 2 weeks by e-mail (sent courtesy of Minnie Mouse) and to the group's pleasure (and some disbelief!), the enrollment count reached 3,005 (see graph). All the TBTC sites contributed enthusiastically with patient enrollments, but it was the site at the University of North Texas Health Science Center (UNTHSC), under the direction of Dr. Stephen Weis, that had the distinction of both "the most patients enrolled during the race period" and "site enrolling patient number 3,000." Congratulations are in order for the whole group, as this was truly a TBTC-wide effort.

- The enrollment pace is ahead of schedule for Study 27, "A double-blind, placebo-controlled comparison of the efficacy and tolerability of moxifloxacin with ethambutol when each is used with isoniazid, rifampin, and pyrazinamide during the initiation phase of treatment of pulmonary TB;" the total number needed is 300 patients and 221 have already been enrolled. The TBTC site in Kampala, Uganda, under the direction of Dr. John Johnson (Case Western Reserve University [CWRU]) and Dr. Grace Muzanye (Uganda-CWRU Research Collaboration) has enrolled about 50% of the total patients in Study 27 to date.
- Drs. Bill Burman and Peter Breese (TBTC site at the Denver Public Health Department), Steve Weis (TBTC-UNTHSC), and Stefan Goldberg (TBTC-CDC) were the first recipients of the NCHSTP/CDC funding for research in ethics and human subjects protection for their proposal "Study of the Effect of Primary Language on the Comprehension of the Informed Consent for a TB Clinical Trial."

- Dr. Carol Dukes Hamilton, TBTC researcher from Duke University Medical Center, responded to an RFP from the NIH with a proposal for "Enhancing the USPH System's Capacity to Engage in Clinical Research."

TBTC budget news:

- To help address DTBE's funding deficit, the TBTC is implementing a \$480,727 budget reduction in 2004. The budget for the remaining TBTC contract period (2005-2008) is being analyzed for further reductions. Recommended reductions will be based on performance, future needs, cost/patient, and other factors. The CDC/DTBE budget for TBTC activities projected to be available is \leq \$9.2 million per year for 2005-2008. Funds for TBTC activities obtained from sources outside DTBE will complement and not supplement DTBE's funds for TBTC.

TBTC personnel news:

- Dr. Earl Hershfield, principal investigator from the TBTC site at the University of Manitoba, Canada, celebrated a young 70th birthday.
- Bill Stanton, RN, Study Coordinator from the TBTC site at the University of California in San Francisco (UCSF), announced his retirement from the TBTC and from public health as of June 2004.
- Dr. Chuck Daley, also from the TBTC-UCSF, announced his departure as principal investigator for this site and his new position as chief of Respiratory Infections and Mycobacterial Disease at the National Jewish Medical and Research Center Department of Medicine.
- Dr. Robert Jasmer will assume the role of principal investigator at UCSF.

The TBTC will meet again October 20 and 21 in Atlanta, Georgia. Until then, please see our two most recent publications:

- Weiner M, Bock N, Peloquin CA, Burman WA, Khan A, Vernon A, Zhao Z, Weis S, Sterling TR, Hayden K, Goldberg S, and the Tuberculosis Trials Consortium. Pharmacokinetics of rifapentine at 600, 900, and 1,200 mg during once-weekly tuberculosis therapy. *Am J Respir Crit Care Med* 2004; 169:1191–1197.
- Gordin FM. Rifapentine for the treatment of tuberculosis: is it all it can be? Editorial. *Am J Respir Crit Care Med* 2004; 169:1176-1177.

—Reported by *Elsa Villarino, MD, MPH*
Div of TB Elimination

UPDATES FROM THE COMMUNICATIONS, EDUCATION, AND BEHAVIORAL STUDIES BRANCH

Benefits of Using the TB Information CD-ROM

Consider the time, money, and effort it takes to produce, update, and distribute each of the TB education and training products available on the DTBE Publications Order Form. Managing these products efficiently is a high priority in DTBE's Communications, Education, and Behavioral Studies Branch. We are always looking for innovative ways to keep you supplied with cost-efficient, up-to-date products. Thus, we are pleased to announce that the TB Information CD-ROM, version 4, is now available.

With the exception of videos, this CD-ROM holds every item that can be ordered from the DTBE Publications Order Form. Owing to shrinking funds available for printing, we encourage you to order and use the TB Information CD-ROM instead of print-based materials when targeting

specific audiences (e.g., physicians or health care workers). As shown in the tables below, the costs associated with producing and distributing copies of the CD-ROM are significantly less than those for printing and distributing print-based products.

Costs of producing DTBE products

Production of...	Costs DTBE
1 copy of each publication on the TB Information CD-ROM	\$65.84
1 copy of the TB Information CD-ROM	\$0.50

Costs of mailing DTBE products

Distribution of...	Costs DTBE
1 copy of the Core Curriculum on Tuberculosis (which is on the CD-ROM)	\$1.84
1 copy of the TB Information CD-ROM	\$0.60

Not only does DTBE realize cost-saving benefits when you use the TB Information CD-ROM, there are many other benefits that directly affect you:

- Saves storage space. One disk holds all of the products (approximately 50) currently found on the DTBE Publications Order Form, except videos.
- Provides more up-to-date information. We are able to update single pieces of information on the CD-ROM more quickly and easily than we can update an entire print-based product.
- Provides access to documents that are currently out of stock. Some documents whose print versions are currently out of stock are included on the CD-ROM (e.g., Self-Study Modules on Tuberculosis).
- Provides instant access to information. The Web interface reduces the amount of time it takes to find information, with menus and links to related documents.
- Conserves resources. Using the CD-ROM reduces the amount of paper and energy

consumed in producing, storing, and distributing DTBE print-based products.

You may order the CD-ROM in the following ways:

- Through DTBE's online ordering system: www.cdc.gov/tb
- By mailing or faxing a DTBE Educational and Training Materials Order Form
- Through the CDC Voice and Fax Information System by calling, toll-free, 1-888-232-3228 and requesting the *TB Information CD-ROM*, order #99-6879.

So next time you are ready to order TB education and training materials, join us in our cost-saving efforts — order the TB Information CD-ROM.

—Submitted by Betsy Carter, MPH, CHES
Div of TB Elimination

Mini-Fellowship Update

The purpose of a DTBE mini-fellowship is to provide DTBE staff with first-hand experience with and knowledge about the role of public health agencies in carrying out TB control activities. The Francis J. Curry, Charles P. Felton, and New Jersey Medical School National TB Model Centers offer mini-fellowships through which they share their TB expertise and knowledge with DTBE staff.

Regina Bess and Amera Khan, Health Education Specialists in the Communications, Education, and Behavioral Studies Branch of DTBE, had a unique opportunity to participate in mini-fellowships at both the Charles P. Felton and the New Jersey Medical School National TB Model Centers in February 2004.

Regina and Amera spent the first part of their fellowship at the Charles P. Felton National Tuberculosis Center at Harlem Hospital. The Harlem center provided the fellows an overview of the center's history, its current projects, and its clinic and fast-track visit operations, as well as an

opportunity to observe DOT in the field. They met with Harlem center staff, including former TB patients now serving as peer support workers in the Tuberculosis Adherence Partnership Alliance Study (TAPAS). They also received a geographic and historic tour of the Harlem area, providing them with a better understanding of the sociodemographics of the community that the center serves.

The Harlem center coordinated with the New York City Department of Health and Mental Hygiene to give the fellows an opportunity to learn about the Bureau of TB Control's operations. Bureau staff provided an overview of their program structure and an opportunity to visit and learn about the clinic and outreach functions of the Brooklyn TB Chest Center and the Regional Field Office.

The next part of the mini-fellowship was conducted at the New Jersey Medical School (NJMS) National TB Model Center. Bruce MacLachlan, a Public Health Advisor in the Field Services and Evaluation Branch, joined the visit as another DTBE fellow. The visit started out with a tour and an overview of the center, conducted by the NJMS National TB Model Center Executive Director, Dr. Lee Reichman. This was followed by an overview of the center's structure and its education, training, and research activities. Center staff provided information on the various projects and functions, including contact investigations, MDR case presentations, and the clinic structure and management. The fellows observed a case management team meeting, infusion therapy for MDR patients, the pediatric clinic, and hospital surveillance activities, as well as DOT and contact investigations in the field. The fellows also observed the center's 2-day "TB Case Management for Nurses" course. The fellows then traveled to Trenton, NJ, to learn about the New Jersey Department of Health TB Program's policy, management, and TB control operations.

Regina and Amara learned much about the different Model TB Center and Department of Health operations and would like to thank the staff at the participating sites for their dedication and willingness to share their TB control operations expertise and knowledge.

—Submitted by Regina Bess and Amara Khan
Div of TB Elimination

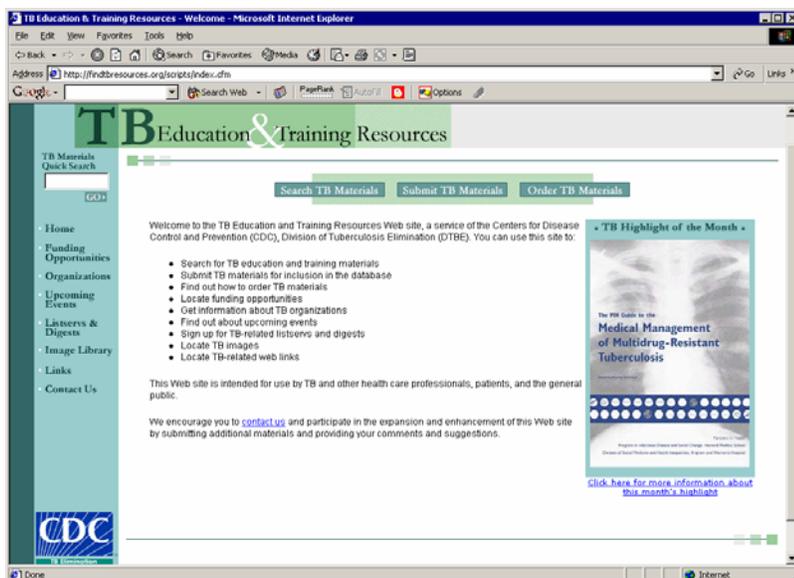
Find Your Way to
www.findtbresources.org

Introduction

Launched in October 2003, the *TB Education and Training Resources Web Site* – www.findtbresources.org – offers a wealth of resources for TB health care professionals. The main feature of the website is the searchable database of materials available from numerous national and international organizations. Users can specify fields such as language and format to find materials to meet their needs. Many materials can be printed directly from the website.

Users can also share their organization's TB materials with others. A submission form ([TB Materials Submission Request](#)) can be used to submit information on any materials that are not already included in the website. The site also allows users to

- Find out how to order TB materials
- Locate funding opportunities
- Get information about TB organizations
- Find out about upcoming events
- Sign up for TB-related listservs and digests
- Locate TB images
- Locate TB-related Web links

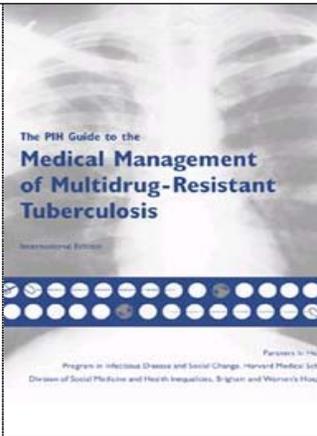
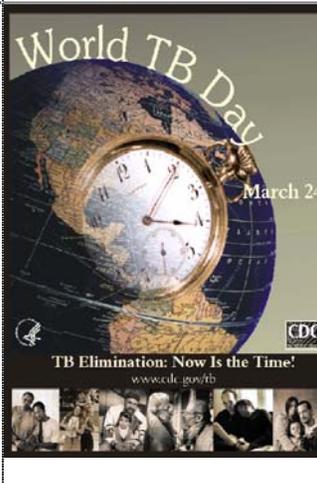
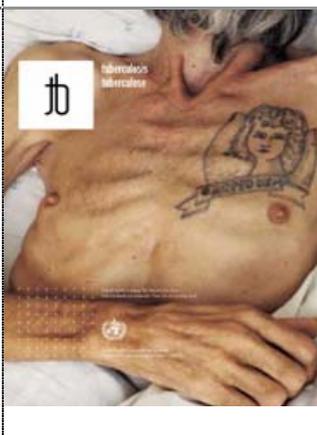


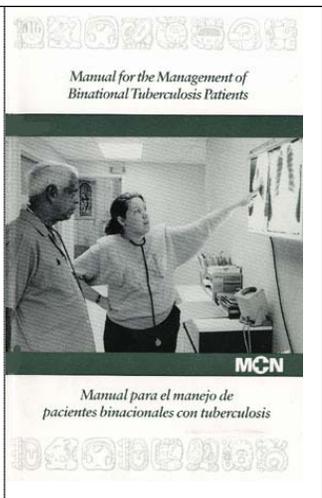
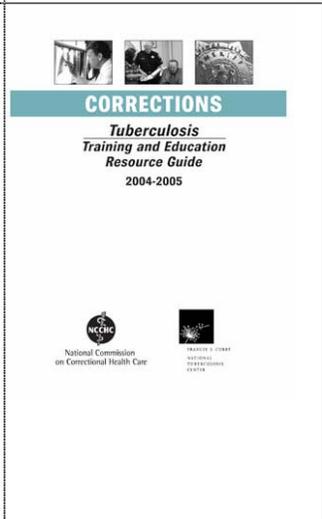
Homepage of the Website

TB Highlight of the Month

Each month, a material, resource, or event is profiled as the "Highlight of the Month" on the website's homepage. To be submitted as the Highlight of the Month, the item must be current, orderable or available online, and visually interesting (e.g., colorful, bold, image-laden), and it must have a clearly defined topic or issue. Several past examples are shown on the next page.

Past Highlights of the Month:

<p>Partners in Health's pocket guide, <i>The PIH Guide to the Medical Management of Multidrug-Resistant TB</i></p>	
<p>CDC's poster, <i>World TB Day, March 24: TB Elimination: Now Is the Time!</i></p>	
<p>WHO's report, <i>TB: Tuberculosis</i></p>	

<p>The Migrant Clinicians Network's book, <i>Manual for the Management of Binational Tuberculosis Patients</i></p>	
<p>The National Commission on Correctional Health Care and the Francis J. Curry National Tuberculosis Center's booklet, <i>Corrections Tuberculosis Training and Education Resource Guide 2004-2005</i></p>	

Web Site Evaluation

In the first 3 months after its launch, the site had 15,222 visits. An analysis of Web usage data indicates that the site is being accessed by both domestic and international audiences. Many of the visits are from return users, suggesting that it is meeting some users' needs. However, to better assess the navigability of the site and determine specific user needs, surveys and usability tests will be done in the future.

Web Site User Feedback

- "This is very well done. The search machine seems quite flexible, and the information on the individual resource pages is perfect (source with link, physical description, format, audience, date revised, etc.)."

- "It is really user-friendly, like a Google for TB materials."

Be sure to bookmark the *TB Education and Training Resources Web Site!*

Any questions or comments about the Web site can be directed to info@findtbresources.org.

—Reported by Hsin-Hsin Foo, MPH,
and Amara Khan, MPH
Div of TB Elimination

INTERNATIONAL UPDATE

International Childhood Tuberculosis Initiatives

In October 2002, CDC sponsored a 2-day meeting that brought together experts on childhood TB to discuss research priorities. Funding was provided by the US Agency for International Development (USAID), and participants included pediatricians, national TB program managers, and representatives of the World Health Organization (WHO), USAID, the International Pediatrics Association (IPA), the International Union Against TB and Lung Disease (IUATLD), the National Institutes for Health (NIH), and CDC. Results of this meeting were published in the May edition of the *International Journal of TB and Lung Disease*.

A subsequent meeting was held in October 2003 to begin developing international guidelines for the diagnosis and management of children with TB. A writing committee was formed, and these guidelines are nearing completion. This meeting included many of the same participants, and was also sponsored by CDC and funded by USAID.

As a result of the renewed interest in childhood TB and the advocacy efforts of many of these same groups, in October 2003 the STOP TB Partnership announced the formation of a new Childhood TB subgroup of the DOTS Expansion Working Group. This represents the first time that there has been a forum as part of the STOP TB Partnership for discussing issues related to childhood TB. One of the first activities of the Working Group will be to finalize the guidelines for treatment of childhood TB. The Working Group elected a chair, Professor Robert Gie from the University of Stellenbosch in South Africa, and is planning to hold the first core group meeting in August 2004. The issues to be discussed include the role of children in the DOTS strategy, making child-friendly dosages and preparations more available through the Global Drug Facility, and advocating that children's health be part of more STOP TB Partnership activities.

CDC staff have been involved in a number of projects related to TB in children, including a descriptive study of children with multidrug-resistant TB (MDR TB) in Latvia, Peru, Russia, and South Africa, a study of children who are contacts of MDR TB cases in Latvia, an annual risk of TB infection (ARTI) survey in Russia using routine data on schoolchildren who are tested annually, and several studies in Botswana on (1) new diagnostic methods for TB in children; (2) outcomes of children treated for TB; (3) an assessment of contact investigation practices, including the exploration of joint screening for TB and HIV; and (4) a 3-year ARTI survey among school children to assess a new method for

determining infection rates, and to determine trends in rates of infection in Botswana.

Two CDC staff are members of the Childhood TB Working Group, Drs. Lisa Nelson and Mary Reichler. We hope that this new momentum and the working group will foster greater interest in children with TB, as well as opportunities for research and collaborative projects in the future.

—Submitted by Lisa Nelson, MD
Div of TB Elimination

UPDATES FROM THE SURVEILLANCE, EPIDEMIOLOGY, AND OUTBREAK INVESTIGATIONS BRANCH

SUN Team Activities

Since 1998, the Tuberculosis Information Management System (TIMS) software has been in use in all states and reporting areas, allowing transfer of TB case surveillance data to CDC for reporting of national TB statistics. However, this client/server-based system is now near the end of its useful product life. Technological advances in surveillance reporting, embodied in the National Electronic Disease Surveillance System (NEDSS), are leading TB case reporting into a new era. NEDSS is being implemented under a CDC-wide plan for surveillance-data gathering, which uses published standards and common user interfaces to operate in a real-time, Web-based environment. Recognizing the need to plan for the transition from TIMS to NEDSS, DTBE created the SUN Team.

The Sites Using NEDSS (SUN) Team was formed in February 2004 and consists of members from multiple branches within DTBE and two state reporting areas. The SUN Team supports reporting areas currently using TIMS that are preparing for transition to NEDSS by providing information, updates, and consultation. The TIMS software will be phased out in stages, and all reporting areas will transition to either the

NEDSS base system (NBS) or a NEDSS-compatible system for transmitting TB surveillance data to CDC. The SUN Team also informs senior DTBE staff about technical issues and procedures for the process of successful transition of reporting areas from TIMS to the NEDSS TB Surveillance program area module (PAM) or other NEDSS-compatible systems.

The SUN Team meets biweekly and its membership includes representatives from two reporting areas, one that is going to use a NEDSS-compatible system (Florida) and one that will use the NEDSS base system (South Carolina). Primary SUN Team efforts to date have focused on the following activities:

- Developing a coordinated DTBE work plan to support internal transition activities,
- Working to gather information that will be useful for reporting areas and CDC staff in anticipation of the transition process, and
- Identifying and addressing related issues that affect DTBE across multiple branches and projects.

The SUN Team's work plan consists of five major objectives:

- Ascertain and develop state-level transition plans,
- Develop transition communications plan and processes,
- Support data migration from TIMS to the NEDSS base system,
- Ensure accurate surveillance data collection, analysis, and dissemination, and
- Provide TIMS software maintenance assistance.

These objectives outline the activities and deliverables that will enable TB reporting areas to plan and prepare for this change and ultimately move from TIMS to NEDSS or a NEDSS-compatible system.

Over the past 3 months, the SUN Team has created tools for capturing state profile

information and 1-page fact sheets for the NEDSS TB Surveillance PAM and Patient Management projects. The SUN Team has planned an informational website, designated an e-mail address (tbpam@cdc.gov) for general questions about NEDSS and the TB PAM from our stakeholders, and developed a frequently asked questions (FAQs) document, which can be requested by using the e-mail address above. During the next few months, the SUN Team will address issues about TIMS maintenance, including data migration, technical plans for mapping and housing TB surveillance data flowing from TIMS and the NEDSS Base System, and the development of NEDSS-compatible and NBS system resources.

Those interested in learning more about NEDSS can also visit the CDC NEDSS website at <http://www.cdc.gov/nedss>. Detailed questions about the TB PAM can be directed to Mr. Philip Baptiste, DTBE TB PAM Project Manager, at pbaptiste@cdc.gov.

—Submitted by Todd Wilson, MS, CHES
Div of TB Elimination

The TB Program Area Module Project for National Surveillance

The Tuberculosis program area module (TB PAM) project is a software development project initiated to support the integration of the national TB surveillance system into the National Electronic Disease Surveillance System (NEDSS:<http://www.cdc.gov/nedss/>) and Public Health Information Network (PHIN:<http://www.cdc.gov/phinf/>). It also addresses the fact that the current TB data reporting software, TB Information Management System (TIMS), is approaching the end of its lifecycle for collecting, analyzing, and reporting RVCT data to CDC.

Upon its completion, the TB PAM will (1) meet the reporting needs of the national TB surveillance system, (2) assist users (state and local TB programs) in a defined and manageable

transition from TIMS to NEDSS, (3) offer states a high-quality replacement option for the legacy TIMS surveillance module, and (4) enable each state using its own information system to report TB surveillance data via PHIN messaging.

Led by DTBE, the software is being developed under a contract with Science Applications International Corporation (SAIC). Participating in the project is a steering committee of representatives from 15 state and 3 big city TB programs, the National TB Controllers Association, the National TB Nurse Consultant Coalition, the Council of State and Territorial Epidemiologists, and the Association of Public Health Laboratories. The CDC project team and the steering committee hold regular meetings to support and expand the requirements-gathering process for developing locally defined fields; processing laboratory results; and entering reports on RVCT data, system administration, and TB surveillance.

Because of challenges in the development of a defined architectural platform for the next version of the NEDSS base system (NBS), the TB PAM project has experienced some delays. The architecture defines the broad outlines and precise mechanisms of the system. This will allow related software to be easily connected to systems and programs made by other manufacturers. The platform will define the standard around which the TB PAM will be developed. Once the platform has been defined, SAIC developers can produce the desired software, and local TB programs will be able to select compatible hardware and applications if they are developing their own TB information systems.

To successfully manage the challenges of architectural platform design being encountered during this process, we are using the rational unified process (RUP). The RUP is an iterative software development process covering the entire software development lifecycle. It divides

the development cycle into a sequence of four phases: inception, elaboration, construction, and transition. This process has enabled us to confront and reduce the risks to successful software development as soon as possible, and focus on realistic objectives related to the development of the TB PAM.

The inception phase, consisting of the TB PAM planning activities, was completed in fall 2003, and the requirements-gathering process (the elaboration phase) was completed in late spring 2004. The construction and testing of the TB PAM was started in summer 2004. By fall 2004, DTBE will have contacted staff of each state TB program to determine how they plan to report RVCT data to DTBE following the transition to PHIN/NEDSS and to help plan the transition from TIMS to PHIN/NEDSS.

We plan to hold a Web-based conference call in fall 2004 to assist in educating state TB programs about the transition process, and about options such as messaging via PHIN for states using PHIN/NEDSS-compatible information systems. We expect to deploy the TB PAM no later than spring 2005 to begin its transition and integration into PHIN/NEDSS. However, the actual release date is dependent on the release and deployment schedule of the next version of the NBS.

—Reported by Philip M.J. Baptiste, MEd
Div of TB Elimination

National TB Surveillance System Update: Public Use Data Set Implementation

Over the past few years, DTBE has received numerous requests from states as well as other stakeholders to establish an online, query-based public use data set for the national TB surveillance system. These requests, coupled with a new CDC/ATSDR data release policy (<http://www.cdc.gov/od/foia/policies/sharing.htm>) issued in April 2003, have propelled the

development of a public use data set, now referred to as the Online Tuberculosis Information System (OTIS).

OTIS will make national TB surveillance system data available to the general public. It will contain information from the Report of Verified Case of Tuberculosis (RVCT) forms submitted to CDC by the 50 states, the District of Columbia, and Puerto Rico. Data on OTIS will be aggregated and modified as needed to block breaches of confidentiality and prevent disclosure of any patient's identity. OTIS is intended to complement, not replicate, the annual TB surveillance report (*Reported TB in the United States*, www.cdc.gov/nchstp/tb) by providing a convenient and comprehensive way to analyze national TB surveillance data. Rather than presenting a series of data tables, OTIS will enable users to focus their queries and perform ad hoc cross-tabulations on variables of interest. When initially implemented, OTIS will include data submitted to CDC from 1993 through 2003. It will be updated each year.

Since the initiation of this process, DTBE has worked closely with state and local data providers to ensure that OTIS is designed to meet their needs, as well as fulfill the requirements of CDC/ATSDR policy. On October 9, 2003, the Surveillance team sent an e-mail to state, local, and big city TB programs, as well as to the National TB Controllers Association (NTCA) and the National Association of City and County Health Officials (NACCHO), requesting volunteers to assist DTBE in the development of the public use data set. These volunteers, representing 22 states and two cities, joined DTBE staff from three branches in establishing the OTIS Steering Committee. From late fall 2003 through winter 2004, DTBE worked with the OTIS Steering Committee to develop the TB Surveillance System Data Release Policy. This contains the elements required by CDC/ATSDR policy, including a list of variables for inclusion in OTIS, the rules necessary to protect the

confidentiality of a patient reported with TB (e.g., rules for data aggregation), and a description of the data and its limitations (e.g., the technical notes). The OTIS Steering Committee has provided invaluable input and feedback during the process. In addition, TB programs not represented on the OTIS Steering Committee have been given the opportunity to review the draft policy and provide feedback.

Once the TB policy completes CDC clearance, DTBE will request that each state TB program sign it, indicating whether or not they want their data to be included in OTIS. DTBE anticipates that the TB policy will be sent to states for signature in fall 2004. Following an additional step for validation of the online database, it is planned that OTIS will be available in early 2005.

Once OTIS is fully implemented, DTBE anticipates the following outcomes:

- Increased use of national TB surveillance data by a range of stakeholders, giving researchers and public health officials an additional tool for monitoring TB trends, focusing TB program priorities, and evaluating progress toward TB elimination;
- Increased efficiency for stakeholders whose time is spent submitting data requests and awaiting responses; and
- Decreased resources expended by the TB Surveillance Team in responding to data requests, enabling transfer of resources to other important efforts such as building surveillance-evaluation capacity at the local and state levels, ensuring a high level of data quality for all system levels, and ensuring a smooth transition to the reporting of TB surveillance data via the Public Health Information Network and the National Electronic Disease Surveillance System.

By achieving these outcomes, OTIS will serve as an important tool in national efforts to eliminate TB in the United States. If you have any

comments or questions about OTIS, please contact Lori Armstrong, Project Officer.

*—Reported by Jodi Keyserling
Div of TB Elimination*

Note: Jodi Keyserling, a Public Health Prevention Specialist, left DTBE for her new PHPS assignment in Sacramento, California, in September 2004. Lori Armstrong will remain the project officer and primary contact for this project at larmstrong@cdc.gov or (404) 639-8860.

TRAINING AND EDUCATIONAL MATERIALS

Respiratory Protection Program Offered by the TB Resource and Education Center, Texas

The Tuberculosis Resource and Education Center (TBREC), an affiliate of the Texas Department of Health (TDH), Texas Center for Infectious Disease, is pleased to introduce a new training program related to respiratory protection for health care workers involved with the care of TB patients. The first presentation of the "Respiratory Protection Program" was piloted in San Antonio, Texas, on April 30, 2004.

The program addressed all required components of a comprehensive respiratory protection program as outlined by CDC, OSHA, and NIOSH. The program contained presentations and discussions on the components of a respiratory protection program such as responsibility, selection of respirators, employee education, medical evaluation, fit-checking and fit-testing, maintenance, cleaning and storage of respirators, record keeping, and program evaluation, including written policies and annual review, and monitoring the use of respirators. The program also included an overview of engineering and administrative controls. Methods

of presentation included video presentations as well as a hands-on practicum that enabled the participants to practice the qualitative fit-test procedure.

Participants were provided with enduring educational materials including manuals, videos, presentation outlines, and a CD-ROM containing two PowerPoint presentations that will enable participants to train their staff; a sample medical evaluation form; the fit-test procedure and fit-test worksheet; and suggested policy templates related to employee training, medical evaluation, selection of respirators, fit-check and fit-testing procedures, and maintenance and storage of respirators. Target audiences for this program include TB Program Managers and Respiratory Protection Administrators.

For further information about the TB Resource and Education Center and its courses please visit the TBREC website:

www.tdh.state.tx.us/tcid/TB-Education-Ctr.htm.

—Reported by Faye McCarthy, RN, Todd Braun, RN, BSN, MPH, Jean Montgomery, RN, MSN, and Stephanie Ott
TB Resource and Education Center
Texas Department of Health (TDH)/Texas Center for Infectious Disease

Products from the New Jersey Medical School National TB Center

The following are new and updated products from the New Jersey Medical School National Tuberculosis Center. They may be downloaded from the Center's website at <http://www.umdnj.edu/ntbcweb> or ordered by calling (973) 972-0979.

Treatment of Tuberculosis: Standard Therapy for Active Disease in Adults - Revised 2004

This pocket-sized card for clinicians provides information on standard anti-TB therapy for

active disease, including dosages, daily and intermittent regimens, side effects, treatment information, and pictures of first-line drugs. The card is based on the 2002 official joint statement of CDC, the American Thoracic Society, and the Infectious Diseases Society of America.

Treatment of Tuberculosis: Standard Therapy for Active Disease in Children & Adolescents

This card provides the same information as the adult card (see above), but is specific to the treatment of pediatric tuberculosis. The card is based on the 2002 official joint statement of CDC, the American Thoracic Society, and Infectious Diseases Society of America, as well as on the American Academy of Pediatrics *2003 Red Book: Report of the Committee on Infectious Diseases*.

Treatment of Tuberculosis in Adult and Adolescent Patients Co-Infected with the Human Immunodeficiency Virus (HIV) - Revised 2004

This pocket-sized drug card for clinicians provides information on treatment options and recommendations for the co-infected patient, including drug interactions and side effects.

TB & Cultural Competency: Notes from the Field

This newsletter provides suggestions for culturally proficient skills development and an ongoing forum for continued learning for those working in TB control. The newsletter includes relevant cases, articles, and resources around culturally competent health care with a focus on TB. The debut issue was released this past June, and is available in both print and electronic formats.

TB Field Investigation: A Resource for the Health Care Worker

This resource outlines the TB field investigation process as it relates to pre-investigation preparation, communication with individuals in the field, confidentiality, field safety, and working with community providers. An accompanying

checklist, which can be used during field work, highlights essential points from the manual.

Performance Guidelines: A Supervisor's Guide for the Development and Assessment of Field Investigation Skills

This manual provides supervisors with methods for training and tools to assess field investigation skills of health care workers including ability to set priorities, locate patients, and provide motivation and education to ensure medical evaluation, use appropriate investigation techniques, and conduct investigations in a timely manner.

—Submitted by Nisha Ahamed, Rajita Bhavaraju,
and Lauren Moschetta
New Jersey Medical School TB Center

NEW CDC PUBLICATIONS

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PERSONNEL NOTES

The Mycobacteriology Laboratory Branch officially joined DTBE on Monday, July 19, 2004. We welcome our new division coworkers! Following are brief biographical sketches of the Mycobacteriology Laboratory Branch staff:

Kris Birkness, microbiologist, works primarily with cell cultures developing models for studying TB pathogenesis. One of these models, a bilayer built with human cells to resemble the epithelial

and endothelial layers of the human alveoli, offers the opportunity to look at the earliest stages of infection and the elicited host immune response. A second model is that of an early granuloma, combining human peripheral blood mononuclear cells with autologous macrophages to observe their interaction and to determine the immunological signals that bring these cells together in response to TB infection.

W. Ray Butler, MS, microbiologist, came to CDC in 1976 and has spent his career working in the mycobacteriology laboratory. His most significant achievement was the development of a novel method for identification of species of *Mycobacterium* by mycolic acid analysis using high-performance liquid chromatography (HPLC). The method has been widely adopted by mycobacteriology laboratories. His main area of expertise is mycobacterial taxonomy and characterization of new species, including *Mycobacterium celatum*, *Mycobacterium triplex*, *Mycobacterium kubicae*, *Mycobacterium shottsii*, *Mycobacterium hackensackense*, *Mycobacterium cosmeticum*, and recently *Mycobacterium pinnipedii*, the newest member of the *Mycobacterium tuberculosis* complex.

Debra Carter, Program Operations Assistant, joined the Branch in September. She came to CDC in 1997 as the Administrative Operations Assistant for the Division of DTBE Office of the Director. Prior to CDC she worked for Fulton County Administrative Office in the Department of MH/ MR/SA, later on transferring to South Fulton Day Treatment Center where she performed audits and assisted with patient care.

Nadege Charles, MS, a microbiologist in the mycobacteriology reference laboratory joined the Branch in 2003. She graduated with honors from the University of Florida. She has been conducting reference and diagnostic studies. She also participates in research projects with colleagues to meet the goals of the Branch.

Mani Cheruvu, PhD, began her research career in the field of tuberculosis while working for her doctoral degree at Tuberculosis Research Centre, Chennai, India. Her doctoral work involved standardization and evaluation of a new drug susceptibility test for rapid identification of multidrug-resistant strains of *M. tuberculosis*. After finishing her PhD in March 2003, Mani came to CDC on an ASM/NCID postdoctoral fellowship. Her postdoctoral work involves analyzing the intracellular survival of *M. tuberculosis*.

Lauren Cowan, PhD, a senior service fellow, is focused on developing improved methods for the genotyping of *M. tuberculosis* isolates such as her recently developed automated method for spoligotyping. She has played a key role in implementing high throughput genotyping methods in the contract genotyping laboratories and will continue to provide technical guidance to the laboratories and advice on interpretation of genotyping results.

Jack Crawford, PhD, began studies on the molecular biology of mycobacteria in 1977 at the VA Medical Center in Little Rock, Arkansas, working with Dr. Joe Bates. His research team was the first to clone IS6110 and demonstrate its use as a target for PCR detection and DNA fingerprinting of *M. tuberculosis*. He came to CDC in 1990 as head of the mycobacteriology reference laboratory. He has played a key role in the implementation of genotyping in the United States, serving as a project officer for the National Tuberculosis Genotyping and Surveillance Network and the current genotyping laboratory contracts.

Lois Diem, a biologist in the mycobacteriology reference laboratory, performs and analyzes *M. tuberculosis* genotyping for outbreak and false positive culture investigations in collaboration with DTBE, as well as hospital, public, or state laboratories. She came to CDC in 1997 after having worked in the Grady Hospital

microbiology laboratory for 13 years, with the last 7 of those years primarily working with tuberculosis.

Adriane Eubanks, MPH, joined the branch in 2004. She will be conducting diagnostic and reference studies in the areas of drug susceptibility and mycobacteriology identification. She will also be participating in various research projects throughout the branch.

Courtney Maus, ORISE Fellow/Emory University PhD candidate, is studying the mechanism of capreomycin resistance in *M. tuberculosis*. She is also investigating the molecular basis of the variable cross resistance among capreomycin, kanamycin, amikacin, and viomycin.

Beverly Metchock, DrPH, came to CDC in 1997 as head of the mycobacteriology reference laboratory. Prior to joining CDC, she was the technical director of the clinical microbiology laboratory at Grady Memorial Hospital in Atlanta and an Associate Professor of Pathology and Laboratory Medicine at Emory School of Medicine. She is board certified in clinical and public health microbiology by the American Board of Medical Microbiology.

Glenn Morlock, MS, is a microbiologist whose primary research interest is drug-resistance mechanisms in *M. tuberculosis* and detection of resistance mutations using molecular methods. His recent study of mechanisms of ethionamide and INH resistance was nominated for the Shepard Award. He also provides DNA sequencing support for molecular epidemiology and rapid drug resistance detection.

Bonnie Plikaytis, MS, microbiologist, has worked at CDC for 26 years, starting in 1978 with Legionnaires Disease then the last 16 years for the Hansens Disease Laboratory which became part of the Tuberculosis/Mycobacteriology

Branch. During the time spent in the mycobacteriology group, she conducted research about and development of rapid typing methods for mycobacteria through which she became involved with the study and epidemiology of the multidrug-resistant *M. tuberculosis* strain W. More recently, her interests have centered on the pathogenesis and capreomycin resistance of *M. tuberculosis*. In addition to her research, she also teaches and guides the graduate students and postdoctoral fellows in the branch to maximize their learning experience and productivity.

David Sikes, biologist, began working in the mycobacteriology reference laboratory in 1999 after working for 7 years for the Emory University Hospital system as a clinical microbiologist. In his current position he performs reference drug susceptibility testing for *M. tuberculosis* and nontuberculous mycobacteria isolates referred from state health department laboratories or other facilities nationally and internationally. In addition to this service, he also actively participates in ongoing research projects and reference studies involving susceptibility testing.

David Temporado, biologist, began his career at CDC with the former Hospital Infections Program as a part-time employee on Project ICARE in 1996. He joined the Diagnostic/Mycobacteriology Section performing susceptibility testing. He also did a rotation in the ID part of the laboratory. Later, he was trained by Dr. Charles Woodley in genotyping, and he performs many other diagnostic molecular-based tests as well.

Sean R. Toney, biologist, worked as a microbiologist for the Texas Center for Infectious Disease (TCID)/Texas Department of Health (TDH) in San Antonio from 1994 until joining the mycobacteriology reference laboratory in July 2000. He is a reference-level diagnostic specialist responsible for performing both high performance liquid chromatography (HPLC) identification of *Mycobacterium* species and

antimicrobial susceptibility testing of rapidly growing mycobacteria. He also participates in research that identifies and characterizes unknown species of mycobacteria and outbreak investigations involving nontuberculous mycobacteria (NTMs). He also serves as a technical advisor for the QuantiFERON TB screening assay.

Mitchell Yakrus, MS, MPH, is a microbiologist who specializes in identification and typing of nontuberculous mycobacteria (NTM) in support of epidemiological investigations. His customers include other federal agencies, state health departments, hospitals, and medical facilities. Previous investigations have included outbreaks of NTM associated with hot tubs, LASIK procedures, footbaths in nail salons, cosmetic surgery, and surgical implants. Other projects involve identifying potential sources of NTM infection such as potable water, biofilms, soil, and food products.

Other DTBE personnel announcements are as follows:

Rana Jawad Asghar, MD, MPH, (goes by "Jawad") joined the Surveillance, Epidemiology, and Outbreak Investigations Branch as a new Epidemic Intelligence Service (EIS) officer in July 2004. Jawad is a medical doctor with an MPH from the University of Washington, where he was also a fellow in the emerging infectious disease program. He has a strong background in infectious diseases and also has experience in lab-based research. Jawad was a clinical lecturer at the clinical research unit in the Department of Infectious and Tropical Diseases at the London School of Hygiene and Tropical Medicine where in addition to teaching graduate students, he developed training strategies for malaria control in African countries for the Gates Malaria Program. Recently, he was the provincial coordinator for the USAID-funded Child Survival Project in Mozambique.

Robert Bailey, MPH, has joined the Epidemiology Team of the Surveillance, Epidemiology, and Outbreak Investigations Branch (SEOIB). Robert has a BS degree in biology from Morehouse College and an MPH from the Rollins School of Public Health at Emory University. Before joining SEIOB, Robert worked as a contract public health analyst in the Division of HIV/AIDS Prevention. As a member of the special projects team in the Program Evaluation Research Branch, he worked on the monitoring and evaluation of HIV prevention programs for community-based organizations that targeted communities of color. He has also worked as a member of research teams that addressed other HIV, TB, arthritis, adolescent and minority health issues. He joins SEOIB to assist with project management activities related to the TBESC.

Carrie Bridges, MPH, finished her 6-month assignment in the Field Services and Evaluation Branch of DTBE on August 13. While with DTBE, Carrie served on the Strategic Planning and Tools teams of the Evaluation Working Group. She also worked on two other initiatives, the Controlling and Eliminating TB in the African American Community (CETBA) demonstration project in Fulton County, Georgia, and a research project using a private-claims database to investigate TB health services utilization. For the next 2 years, Carrie will complete her Public Health Prevention Service fellowship with a field assignment at the Rhode Island Department of Health (HEALTH). In Providence, Carrie will join the Office of Minority Health's Refugee Program as the Refugee Health Coordinator. In her new capacity, Carrie looks forward to continued collaboration with the TB network.

Kevin Cain, MD, is one of DTBE's new EIS Officers and is assigned to the International Research and Programs Branch (IRPB). Kevin is a medical doctor with a specialty in internal medicine. He conducted research on the prevalence and cause of bloodstream infections

in Dar es Salaam, Tanzania, together with staff of the Division of Healthcare Quality Promotion in CDC's National Center for Infectious Diseases. He has also researched the association between fever and malaria parasitemia in Ghana. In addition, Kevin has directed TB screening programs at health clinics in West Philadelphia, and has taught science to underprivileged children.

Viva Combs, MPH, of DTBE's Surveillance, Epidemiology, and Outbreak Investigations Branch (SEOIB) left CDC in August. She is moving to Oslo, Norway, where she will be studying at the University of Oslo, in the Faculty of Medicine within the International Community Health program. She plans to pursue a PhD in mother-to-child transmission of HIV and the impact of stigma on prevention, community support, and infant feeding practices in Africa (in Botswana, South Africa, Malawi, or Tanzania). Viva was closely involved with the development and start-up of the TB Epidemiologic Studies Consortium (TBESC). She helped provide the vision for the TBESC and helped turn it from a disparate group of sites and people into a fully functioning consortium with serious research and collaboration. She also worked on a number of state-of-the-art applications that enhanced the efforts of the TBESC. We wish her *bon voyage* and the very best of luck.

Vincent Fears was selected for the public health advisor (PHA) position in Detroit, Michigan. His start date in his new position was July 12, 2004. Since 2002, Vincent has been assigned to the Chicago Health Department. He was responsible for coordinating TB case and contact investigation activities conducted by program staff and partner agencies. Vincent joined DTBE in January 2001 and was assigned to the Chicago program as a field investigator, learning the basics of TB control and program protocols. He transferred to DTBE from the Division of Sexually Transmitted Disease Prevention (DSTDP), where he was last assigned to the

Baton Rouge, Louisiana, program. Vincent had previous DSTDP assignments in West Palm Beach, Florida, and Cleveland, Ohio. He is a 1991 graduate of Alabama State University with a bachelor of science degree in biology.

Derrick Felix was selected for the public health advisor position in Fort Wayne, Indiana, and began his new assignment on September 5, 2004. Derrick joined DTBE in April 2003 and was assigned to the Chicago Department of Public Health TB Program. In this assignment, he led and participated in monthly case conferences; conducted surveillance activities, case management, and contact and source case investigations; and provided DOT. Derrick also participated in large screenings within worksites and schools. He developed an Access database to track contacts found during contact investigations and made modifications to another database to analyze Class B1 / B2 immigrant screening data. Derrick also collaborated with the Division of Global Migration and Quarantine at Chicago's O'Hare International Airport to evaluate and improve a newly implemented appointment system for Class B1 / B2 notification. Additionally, he participated in temporary duty assignments in Portland, Maine, to assist in a TB outbreak among the homeless; in Augusta, Maine, to implement a database allowing outbreak analysis and oversight at the state; and in Fort Wayne, Indiana, to assist in an outbreak among the African American community. Prior to joining CDC, Derrick worked for the Florida Department of Health TB Program in Palm Beach County from June 2002 to April 2003. As a health services representative, he was assigned TB case work. Before joining the Florida Department of Health, from August 2000 to June 2002, Derrick worked as a health fitness specialist for Johnson & Johnson Health Care Systems in Juno Beach, Florida. Derrick, a graduate of the University of Florida, has a BS degree in Health Science Education.

Hsin-Hsin Foo, MPH, completed her second year as an Association of Schools of Public Health (ASPH) fellow with DTBE in the Communications, Education, and Behavioral Studies Branch (CEBSB) and left DTBE on September 3. In CEBSB she worked on a number of health communication projects such as revising and updating the poster on placement and interpretation of the Mantoux skin test. She also played a major role in the development and promotion of CEBSB's TB Education and Training Resources Web site. Hsin-Hsin was recently selected for a health education specialist position in the CDC National Center for Injury Prevention and Control (NCIPC) Division of Violence Prevention. We will certainly miss her, but are pleased that she is staying in the CDC family.

Theresa Harrington, MD, MPH, joined the Outbreak Investigations Team of the Surveillance, Epidemiology, and Outbreak Investigations Branch on June 29 as medical epidemiologist. Prior to joining DTBE, Dr. Harrington was a state-based Epidemic Intelligence Service (EIS) Officer in Mississippi. During her EIS training, she worked on multiple infectious-disease outbreaks related to Hepatitis B, Meningococcal meningitis, and West Nile virus. She also worked on a case-control study of risk factors for infection and predictors of morbidity from West Nile virus infection in Mississippi. Dr. Harrington is a graduate of Tulane University and is board certified in internal medicine and pediatrics, and also holds a bachelors degree in microbiology and immunology from the University of California, Berkley.

Bryan Kim, MPH, joined the International Research and Programs Branch as a program analyst on June 1, 2004. Bryan recently served as a Public Health Analyst with the Capacity Building Branch (CBB), Division of HIV/AIDS Prevention, National Center for HIV, STD, and TB Prevention, CDC. In this position, he provided

guidance and technical assistance to international, national, state, and local health agencies in planning, implementing, and evaluating their HIV prevention and capacity-building assistance programs. He was the lead coordinator for the Youth Capacity-Building Assistance Initiative in CBB. Bryan also served as a faculty advisor to several scholars for the Institute for HIV Prevention Leadership, an HIV prevention training program for program managers in community-based organizations. During his tenure at CBB, Bryan authored or co-authored several publications on international and domestic HIV prevention research. He was recently detailed to the Global AIDS Program in Hanoi, Viet Nam, to provide support to the Deputy Director in monitoring CDC's cooperative agreement with Viet Nam's Ministry of Health (MOH) by monitoring HIV prevention activities and conducting site visits. Bryan also developed an operational manual to assist the Viet Nam MOH and provincial health staff on the development of HIV prevention program plans. Bryan received his BA in psychology from the University of New Mexico, and a masters degree in public health from the University of North Carolina at Chapel Hill.

Barbara Lassiter joined the DTBE Field Services and Evaluation Branch on July 12 as the new Program Operations Assistant. Barbara began her federal career in 2000 working as a secretary to the Branch Chief of the Exposure Investigations and Consultation Branch, Agency for Toxic Substances and Disease Registry (ATSDR). She had prior experience in the health care field working at Grady Memorial Hospital as a medical assistant for 9 years.

Lynn Latimer has joined the Surveillance, Epidemiology, and Outbreak Investigations Branch (SEOIB) as the contract surveillance data manager. Lynn joined SEOIB on August 30. She worked for many years as a Data Collection Manager and Information Systems Manager for the Georgia Department of Education, directing

the No Child Left Behind data reporting project. This project involved the data collection and analysis of over 1.5 million student and assessment records. She served as a liaison between the 25-member development team and the business owners, developing requirements documents and use cases, analyzing and verifying data, and presenting key project status reports to management. In addition, she developed a Web-based reporting portal with over 3000 users to track progress for Georgia's 2000 public schools. Lynn's data management experience began in 1998 at the Gwinnett County Board of Education, where she supervised a three-member technology support team responsible for designing and implementing a comprehensive personnel system, among other key Information Technology projects. Lynn has a BS in dietetics and institutional management and an MS in nutrition science, both from the University of Georgia. Lynn is currently pursuing an MS in information technology from Southern Polytechnic State University.

Kelly McCarrier, an Association of Schools of Public Health (ASPH) fellow with the Clinical and Health Systems Research Branch, will be leaving CDC in September to pursue a doctorate degree in Health Services Research at the University of Washington, Seattle. Since his arrival in Atlanta last fall, Kelly has been a valuable member of the Health Systems Research Team and has contributed his skills and efforts to a number of projects. He has been primarily involved in the ethnographic study "Perceptions of TB Among Foreign-born Persons," coding and analyzing the qualitative data from in-depth interviews. He also played active roles in the DTBE/HRSA collaborative study, "Improving TB Services for Persons with HIV Infection," the TB Behavioral and Social Science Research Forum, and the Evaluation Workgroup. He has also served as co-leader of the Atlanta Area Evaluation Association's "New Evaluators" group. We will miss Kelly's intellectual contributions to projects and his ability to "think outside the circle." We

wish Kelly the very best in his new endeavors in Seattle.

Jane Mezzoff, PhD, who joined DTBE 1 year ago in the Communications, Education, and Behavioral Studies Branch (CEBSB), accepted a position with the Special Projects Team, Program Evaluation Research Branch, Division of HIV/AIDS-Prevention, Intervention, Research, and Support. She began her new job on August 9. While in CEBSB, Jane contributed to a number of projects related to behavioral studies, and was particularly involved in the development and conduct of DTBE's TB Behavioral and Social Science Research Forum that was held in Atlanta last December, as well as with compiling and producing the proceedings of the Forum.

Angela Rodgers Moore, MPH, is serving her first 6-month assignment under the PHPS program with the Field Services and Evaluation Branch (FSEB). PHPS is 3-year training program that consists of training for 1 year with a an assignments at CDC and a 2-year field assignment at a local or state health department. Angela is a recent graduate of the University of Alabama at Birmingham School of Public Health, concentrating in Maternal and Child Health. She has also worked for a nonprofit community-based organization that works primarily with parents whose children have been lead poisoned. This particular CBO works with local health departments to educate and screen those who have been affected by lead contamination, as well as allocating resources to remedy contamination in homes. She is excited about blending her skills and competencies with FSEB and looks forward to working with the staff. Angela will be working specifically on Evaluation Work Group projects with Maureen Wilce and Dr. Mark Lobato.

Maria Luisa Moore, MD, MPH, left her post as Chief of the Surveillance Team of DTBE on August 1, 2004, to become CDC's Tuberculosis Medical Officer in San Diego, California. Maria

Luisa, known by all as Marisa, received her MD degree at the University of California at San Diego in 1989. She completed her residency training in internal medicine at the Mayo Graduate School of Medicine and received a masters degree in public health from the University of Minnesota in 1994. Marisa began her CDC career as an Epidemic Intelligence Service (EIS) Officer in DTBE in 1995, and joined the DTBE Surveillance branch in 1997, when her EIS training finished. In 2000, she was selected to be the Chief of the Surveillance Section of the Surveillance and Epidemiology Branch (now the Surveillance Team of the Surveillance, Epidemiology, and Outbreak Investigations Branch). In this position, she carried on and improved upon the strong surveillance structure she inherited from Dr. Eugene McCray. Marisa also recognized the urgency of announcing annual TB surveillance data as soon as possible. She convinced field staff to finalize their annual reports within 10 weeks of the end of the reporting year, provided technical assistance to accomplish this, and oversaw the data analysis that was needed to quickly understand and summarize the major epidemiologic trends. For the last 2 years, Marisa's team has published an analysis of provisional surveillance data in March. More remarkable still is the fact that these provisional data have been >99% accurate when compared with the final official data. In addition, Marisa formed and chaired the Tuberculosis Surveillance Analytic Steering Committee to encourage senior epidemiologists at CDC and elsewhere to undertake analytical projects and see them through to completion. She also worked with Dr. Lori Armstrong to create an online, searchable, public-use TB dataset that will provide access to TB surveillance data to scientists everywhere. And with CDC's implementation of the National Electronic Disease Surveillance System (NEDSS), Marisa served as the CDC subject-matter expert before her departure, overseeing the incorporation of TB surveillance data requirements into the NEDSS reporting system. She established a steering

committee of surveillance experts from state TB programs, thus ensuring input and guidance from end users of the new system. Her input resulted in a 230-page document that specifies in precise detail the requirements for the new system, guaranteeing that the new system will respond accurately to user needs and will maintain high-quality national data. The Surveillance Team at DTBE will miss her enormously, but fortunately, we are not really losing her. She has returned to southern California to work with Dr. Kathy Moser and the San Diego County TB control program as a medical officer and medical epidemiologist. We wish Marisa the best as she undertakes this exciting new direction in her career.

Gabe Palumbo was selected for the public health advisor (PHA) position in the TB program in Berkley, California. Gabe joined the DTBE field staff in 1993 with an assignment to the New York City TB Program. This assignment provided him with a broad understanding of public health and knowledge about programmatic issues and clinical services. In 1996, Gabe was reassigned to the New York State TB Control Program with responsibilities for both Nassau and Suffolk counties. Gabe was subsequently reassigned to the Wisconsin TB Program in 1997, where he provided consultation and technical advice on statewide TB program development and assistance to local jurisdictions. In January 1999, he was selected for the senior PHA position in Hawaii, where he was responsible for TB program management activities. Most recently, in 2001, Gabe reported to Lansing, Michigan, where he was responsible for providing technical advice and assistance to the Michigan TB Program, as well as working with local health departments in TB prevention and control efforts.

Brian Pascual has been selected for an epidemiologist position in the Clinical and Health Systems Research Branch (CHSRB). Brian comes to DTBE from the National Immunization Program (NIP) and reported to DTBE on September 6. Brian will be working with Dr. Jerry

Mazurek on research projects and issues related to the QuantiFERON TB test.

Margaret Patterson has accepted a transfer from her public health advisor (PHA) position in the Palm Beach County Health Department, Riviera Beach, Florida, to the South Carolina TB Control Program, Columbia, South Carolina. Her transfer was effective on September 5, 2004. Margaret has over 15 years' public health experience, working mostly in the South Carolina Sexually Transmitted Disease (STD) Control Program. She began her federal career in 2001 with CDC's STD program and was assigned to Washington, DC. In 2003, Margaret elected to leave the CDC STD program to become a PHA with DTBE. While assigned to West Palm Beach, she worked closely with the homeless and substance abuse populations in conducting targeted testing. She provided DOT and conducted contact investigations among the homeless. She had the opportunity to work on two high school contact investigations. Margaret testified in two court hearings that resulted in detentions of patients for nonadherence to treatment.

Dana Peebles, MPH, joined DTBE as a first-year ASPH Fellow in the Communications, Education, and Behavioral Studies Branch (CEBSB) on August 2. Dana recently moved to Atlanta from the Washington, DC, area. Upon moving to Maryland in 2001, she worked as the Assistant Director of Programs at the National Congress of Black Women. The following year, Dana conducted biomedical research as a Research Assistant at the Uniformed Services University of the Health Sciences and began working towards her masters degree in public health in health promotion at George Washington University. Last summer, as an intern in CDC's Division of Parasitic Diseases, she developed an educational workshop and supplemental materials for the Parasitic Diseases Branch. While in her second year at George Washington, she was a health educator and mentor at the Boys & Girls Club in DC. The internships at CDC

and the Boys & Girls Club further developed her interests in instructional design and curriculum development. The fellowship is an excellent opportunity for Dana to expand her knowledge base in TB and health education. She is a native of North Carolina and a 2000 graduate of Hampton University.

Michael Qualls recently left DTBE for a position in CDC's Global AIDS Program. Michael has done a tremendous job in his role as Deputy Branch Chief for the International Research and Programs Branch (IRPB) and for the Division since joining DTBE in December 2000. Among the tremendous contributions he made to the branch as the deputy chief, he managed eight cooperative agreements, including launching five new ones with Ministries of Health and international organizations, and was instrumental in helping to define and establish CDC's role in the USAID-supported TB Coalition for Technical Assistance. He also successfully organized the international assignments of five DTBE employees (in Russia, France/IUATLD, India, Thailand, and Botswana) and three contractors (two in Botswana and one in Brazil). In addition to the extensive contributions he made in the administrative realm, he also made considerable contributions in the technical realm including performing consultancies and trainings on infection control in Estonia, Russia, and Philippines, and also in developing and implementing critical programmatic indicators for the monitoring and evaluation of DOTS expansion projects in partnership with WHO and USAID. He has led and helped to shepherd numerous initiatives for IRPB and DTBE that have allowed for substantial growth and expansion of DTBE's international activities and he has demonstrated amazing creativity and resourcefulness in problem solving. We deeply appreciate his commitment to the mission and work of DTBE and we will miss him very much. Michael leaves us for an exciting new opportunity in the field working as the Deputy Director of

CDC/GAP-Cambodia. We wish him all the best with his new pursuits.

Cathy Rawls, MPH, has completed her first year as an ASPH Fellow with the Communications, Education, and Behavioral Studies Branch (CEBSB) and will spend her second year of the fellowship working in the Clinical and Health Systems Research Branch (CHSRB). While with CEBSB, Cathy contributed to a number of projects related to behavioral studies, such as assisting with planning and conducting the TB Behavioral and Social Science Research Forum and developing a database that contains citations and short abstracts of articles on behavioral and social science studies.

Frank Romano was selected for the senior public health advisor (PHA) position in Columbus, Ohio. Since 2002, Frank has been working with senior PHA Heather Duncan on a number of programmatic and operational activities in Tallahassee, Florida. Frank began his career in public health in 1994 as a Disease Intervention Specialist for the Louisiana TB control program in New Orleans. In 1998, Frank was promoted to Regional TB Surveillance Coordinator responsible for all surveillance and reporting activities in New Orleans and the surrounding region. His first assignment with DTBE was in 2001 in Chicago, where he spent 18 months before moving to Florida. Frank began work in Columbus on July 12, 2004.

Kathryn Ruck has been selected for the public health advisor (PHA) position in Trenton, New Jersey. From March to June 2004 she served as technical and programmatic advisor to the South Carolina TB Controller, with a specific focus on the DTBE's project Intensive Interventions to Increase the Impact of Contact Investigations. While in this position, she conducted statewide trainings on contact investigations, developed state contact investigation policies and procedures, participated in audits and quality assurance reviews, and developed the content

and reports for the Tuberculosis Contact Investigation System (TBCIS). Prior to that assignment, Kate served as a PHA for the New Jersey Department of Health and Senior Services, assigned to the Hudson County TB Program as a public health field representative. Before coming to DTBE, she was a member of the TB Control Program for the Louisiana Office of Public Health. Kate began her assignment on June 27, 2004.

N. Sarita Shah, MD, MPH, is one of DTBE's new Epidemic Intelligence Service (EIS) Officers; she is assigned to IRPB. Sarita is a medical doctor, and is receiving her MPH from Columbia University. She is also currently an Instructor in Clinical Medicine at Columbia-Presbyterian Medical Center. Sarita has been working with the New York City Department of Health and Mental Hygiene on a number of projects, including the NYC HIV Incidence Project, which she helped to design. She has conducted both malaria and TB research in Iquitos, Peru, and traveled to India after the earthquake in northern Gujarat to help in the recovery process. Sarita has a special interest in photography and has had photos published in *JAMA* and the *New England Journal of Medicine*.

Brian Sizemore, MBA, has recently joined the Epidemiology Team of DTBE's Surveillance, Epidemiology, and Outbreak Investigations Branch (SEOIB). Brian received his bachelor of science degree in Industrial Management with a focus on the textile industry from Clemson University. He continued his studies at Clemson, receiving a masters degree in business administration. He is working with SEOIB as a contractor with Westat, assisting Betty Bouler and Tammy Roman with TBESC invoices and other budget analyses.

April A. Thornton is welcomed to the Surveillance, Epidemiology, and Outbreak Investigations Branch of DTBE as the branch's new Program Operations Assistant. April was

most recently a Public Affairs Assistant in CDC's Office of Communications. Prior to that position, she was a secretary in the Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion. She began her federal career in 1990 as an administrative assistant at the Federal Highway Administration in Atlanta. April reported to SEOIB on June 28, 2004.

Paul Weinfurter recently accepted the position of project coordinator for Task Orders number 5 and 13 of the TBESC. Paul graduated from the University of Georgia in 2002 with a bachelors degree in microbiology. He then earned a masters degree in public health in epidemiology from the Rollins School of Public Health of Emory University. While at Emory he worked with the Center for Public Health Preparedness on bioterrorism-related projects. He then took a position at Emory University Hospital, managing the data for polycystic kidney disease patients, and used these data to complete his master's thesis.

Kai H. Young, MPH, is a new ASPH/CDC fellow in the Field Services and Evaluation Branch (FSEB), working on program evaluation. She graduated from the University of California, San Diego, with a bachelor of science degree in biology/biochemistry in 2000. Kai had developed an interest in public health from volunteer work, and moved to Atlanta to pursue a masters degree in public health at Rollins School of Public Health, Emory University. She recently graduated from the department of behavioral science and health education with a focus in behavioral science. While attending Rollins School of Public Health, Kai became interested in evaluation and worked on several evaluation projects, including California Healthy Cities and Communities, Tribal Effort Against Lead (TEAL), the Teen Pregnancy Prevention program in Oklahoma City (Hearts of OKC), and Girl Scouts of Northwestern Georgia. She has served as the co-chair of the New Evaluator/Student group at the Atlanta-area

Evaluators Association. Kai is interested in both evaluation and behavioral science research. She hopes to work toward strengthening the capacity of local public health organizations to help programs reach their full potential while empowering those who serve the needs of the communities. She is very excited to have this fellowship opportunity, and is eager to learn about and engage in the activities of the division.

IN MEMORIAM

William W. Stead, M.D., internationally recognized physician, scientist, educator, and humanitarian, died on July 8, 2004. Born on January 4, 1919, in Decatur, Georgia, William White Stead was the son of Emily White and Eugene Anson Stead and the youngest of five children. After earning an AB degree in 1940 and an MD degree in 1943 from Emory University in Atlanta, Georgia, he embarked on an academic medical career spanning six decades. In the course of his career he served as a medical officer in both the U.S. Navy and the U.S. Army, on the medical faculties of the University of Cincinnati, the University of Minnesota, the University of Florida, and the Medical College of Wisconsin before becoming a Professor of Medicine at the University of Arkansas College of Medicine in 1972. He became the Director of the TB Program at the Arkansas Department of Health in 1973, and remained in this position until his retirement in July 1998. Dr. Stead died at home in Little Rock, Arkansas, from complications of Alzheimer's disease.

Dr. Stead was a scholar of pulmonary diseases and TB throughout his professional career. He held several prestigious clinical appointments and in the course of his career made a number of landmark observations on the pathogenesis, treatment, and prevention of TB. As a consequence of his achievements, he received numerous professional awards and was regarded as the outstanding clinician in TB in the United

States and perhaps worldwide. One of his outstanding achievements was the development with his colleagues in the 1970s of a highly innovative, short-course therapy for TB. This therapy was adopted both in the United States and worldwide as the definitive treatment for this disease because it improved outcomes while markedly shortening the time and cost of therapy. Through his work and perseverance as the Director of the TB Program at the Arkansas Department of Health, Dr. Stead uncovered an important epidemic of TB in the prison system in Arkansas, which led to the understanding and correction of TB as a public health problem in jails and prisons nationally and internationally. Ironically he had to "break in" to Cummins prison; his efforts to investigate the TB problem there were met with resistance from prison authorities, leading him to personally appeal his case to the governor. He made major contributions to the understanding of the transmission, epidemiology, treatment, and prevention of TB in the elderly in nursing homes. Based on his work in Arkansas nursing homes, he discovered differences in the racial and genetic susceptibility to TB, resulting in a landmark paper in the *New England Journal of Medicine* in 1990. His work on TB surveillance and control in prisons and nursing homes serves as a model that has been adopted nationally and internationally.

He published extensively, authoring or co-authoring almost 200 publications in medical journals, including the *New England Journal of Medicine* and the *Journal of the American Medical Association*, and the two major textbooks of medicine. He served on the American Board of Internal Medicine, as President of the American Federation of Clinical Research, and on the editorial boards of several medical journals, and was a member of the Advisory Council for the Elimination of Tuberculosis for CDC in Atlanta. As a consequence of his clinical and scientific achievements, Dr. Stead received numerous national and international awards.

Dr. Stead was recognized for his passion for teaching and medical education. He was also known for his quiet, selfless dedication to patients, going far beyond the usual care. For years he traveled weekly to the far corners of Arkansas to see patients in public health clinics, not infrequently making house calls to explain the importance of full compliance of TB therapy to patients and their families. He would provide financial assistance to patients and help them pay for their personal expenses and support them in other ways in order to promote their successful treatment of TB.

Dr. Stead was a champion of environmental and social causes. Although he received many medical awards over the years, he was perhaps most proud of "The Peacemaker" award from the Arkansas Peace Center.

He had a profound love of nature and outdoor Arkansas — camping, canoeing, sailing, swimming, hiking, all of it. He and his wife Joan were frequent visitors to many parks in the state of Arkansas including the Buffalo River, Mt. Magazine, Pinnacle Mountain State Park, and Two Rivers parks in Little Rock where several benches and improvements bear their names.

In lieu of flowers, the family has requested donations to the William W. Stead, MD, Family Memorial Fund, c/o Jesse Tolleson, Regions Bank, at 800 S. Shackleford Rd, Little Rock, AR 72219. Proceeds from this fund will support programs to advance the understanding, diagnosis, and treatment of tuberculosis and to enhance selected public natural spaces honoring his memory in the state of Arkansas.

CALENDAR OF EVENTS

October 13-15, 2004

TB Nurse Case Management Course

Gainesville, FL

Florida Dept. of Health

Bureau of TB and Refugee Health

Web site: www.doh.state.fl.us/disease_ctrl/tb

October 13-16, 2004

The Denver TB Course

Denver, CO

National Jewish Medical and Research Center

Web site: <http://www.njc.org/tbcourse.html>

October 18-19, 2004

Northeast TB Controllers Meeting

Newport, RI

October 18-22, 2004

2004 DTBE Program Managers' Course

Atlanta, GA

CDC contact: Scott McCoy

October 19-20, 2004

TBTC Semi-Annual Meeting

Atlanta, GA

TB Trials Consortium

October 23-28, 2004

CHEST 2004

Seattle, WA

American College of Chest Physicians

Web site: <http://www.chestnet.org>

October 28-November 1, 2004

35th UNION World Conference on Lung Health
2004

International Union Against TB and Lung Disease
Paris, FRANCE

Web site: <http://www.worldlunghealth.org>

October 30-November 2, 2004

44th Interscience Conference on Antimicrobial
Agents and Chemotherapy (ICAAC)

Washington, DC

American Society for Microbiology

Web site: <http://www.icaac.org>

November 2-5, 2004

TB Case Management and Contact Investigation

San Francisco, CA

Francis J. Curry National TB Center

Web site:

http://www.nationaltbcenter.edu/catalogue/training_courses.cfm

November 3-5, 2004

Statewide TB Meeting

Tallahassee, FL

Florida Dept. of Health

Bureau of TB and Refugee Health

Web site: www.doh.state.fl.us/disease_ctrl/tb

November 6-10, 2004

APHA 132nd Annual Meeting and Exposition

Washington, DC

American Public Health Association

Web site: <http://www.apha.org>

November 9-10, 2004

12th International Congress for Infectious
Diseases

Toronto, CANADA

Centre for Global Health Research

Web site: <http://www.cghr.org/events.htm>

November 15-16, 2004

First-Line Supervisor's Course

Newark, New Jersey

New Jersey Medical School National TB Center

For more information, contact Lauren Moschetta

Tel: (973) 972-1261 or e-mail:

moschelb@umdnj.edu

Web site:

http://www.umdnj.edu/ntbcweb/et_frame.html

November 15-16, 2004

Four Corners TB/HIV Conference

Flagstaff, AZ

48

November 15-17, 2004

International Symposium on Emerging Trends in
TB Research

New Delhi, INDIA

International Centre for Genetic Engineering and
Biotechnology

For information, write to Dr. Pawan Sharma,
Immunology Group, ICGEB Campus, AAA Marg,
P.O. Box 10504, New Delhi-110 067, India

E-mails: pawans@icgeb.res.in or

pawan_37@hotmail.com

Fax: +91-11-2616-2316

November 17, 2004

Southwest TB Controllers Association
Flagstaff, AZ

November 30-December 1, 2004

CDC Respiratory Conference

Atlanta, GA

December 6-10, 2004

AG Holley Clinical Course

Lantana, FL

Florida Dept. of Health

Bureau of TB and Refugee Health

Web site: www.doh.state.fl.us/disease_ctrl/tb

December 13, 2004

AG Holley TB Skin Test Trainers Course

Lantana, FL

Florida Dept. of Health

Bureau of TB and Refugee Health

Web site: www.doh.state.fl.us/disease_ctrl/tb

April 20-23, 2005

The Denver TB Course

Denver, CO

National Jewish Medical and Research Center

Web site: <http://www.njc.org/tbcourse.html>

TB Education and Training Network (TB ETN) Individual Membership Application

Date: _____

Visit www.cdc.gov/nchstp/tb/tbetn for details on membership features

Contact Information (Please print or type)

Name: _____

Degree(s): _____

Job Title: _____

Employer: _____

Mailing Address: Street _____

City _____ State/Province _____

Zip/Postal _____ Country _____

Phone: _____ Fax: _____

E-mail: _____

I am a

New Member

Renewing Member

Type of Employer

(Check only one box)

- Federal government
- State government
- County/city government
- Non-profit agency
- Hospital/Acute care facility
- Migrant clinic
- Private medical office/clinic
- Correctional center/jails
 ___ State ___ County/City ___ Federal
- Homeless shelter
- Long-term care facility
- Occupational health facility
- University/college
- Community Based Organization
- Other (Please specify): _____

Type of Membership

(Check only one box)

OPTION 1

Active

Individuals who have the lead role for TB education and training in their agencies. Active members have the opportunity to participate in all TB ETN activities, receive priority registration for all TB ETN meetings and activities, may vote on TB ETN business-related issues, and serve on subcommittees.

OPTION 2

Information only

Individuals who do not have a lead role in TB education and training in their agencies or do not wish to actively participate in TB ETN activities. Information-only members receive information about TB ETN meetings, activities, etc., via e-mail postings to the membership. Information-only members are not eligible to vote on TB ETN business-related issues or serve on subcommittees.

Join a Subcommittee

Subcommittee membership is open to all **Active Members**. Subcommittee activities include monthly telephone conference calls, development of tools to benefit TB educators, marketing of TB ETN, and planning the annual conference.

- Communications/Membership Subcommittee
- Conference Planning Subcommittee
- Cultural Competency Subcommittee

Additional Information

In a 40-hour work week, what percent of your time is spent on TB education and training activities? _____

In your program area, with what other TB control agencies, if any, do you collaborate? (Please list)

- 1.
- 2.
- 3.

Please describe your top five job responsibilities as they relate to **TB education and training** activities.

- | | |
|----|----|
| 1. | 4. |
| 2. | 5. |
| 3. | |

What top five special interest/expertise areas do you have that might strengthen TB ETN?

- 1.
- 2.
- 3.
- 4.
- 5.

What do you hope to gain by membership in the TB ETN?

"Bringing together TB education and training professionals"
Information for New and Existing Members

Benefits of Membership

- Networking and collaborating with other TB education and training professionals
- Exchanging ideas, information, and experiences
- Accessing and sharing resources
- Collaborating on training and education research
- Receiving updated information about TB courses and training initiatives
- Building TB education and training-related skills
- Pilot testing and previewing *new* communication and education materials

Membership is open to all persons who have an interest in TB education and training issues. To activate membership, an individual must complete this application. New members may join TB ETN at any time during the year. There are no membership fees. In order to keep the membership list current, the Steering Committee may, on an as-needed basis, request members to re-register.

If you have any questions about TB ETN or would like to request additional membership forms, please contact TB ETN at **tbetn@cdc.gov**.

Send completed membership application:

E-mail: tbetn@cdc.gov
Fax: (404) 639-8960

Mailing address:
TB ETN/CDC
1600 Clifton Rd., NE MS E10
Atlanta, GA 30333 USA

TB Education and Training Materials Submission Request

Please mail, fax, or e-mail completed request to the CDC National Prevention Information Network (NPIN), Attn: Manager, PO Box 6003, Rockville, Maryland, 20849-6003; fax: 301-562-1050; e-mail: info@findtbresources.org. For additional information call 800-458-5231 and press "1" for reference and referral staff who will direct your call.

Title of Material:			
Language:		Country of Origin:	
Author:		Date of Publication:	
Available From (organization that distributes the material):			
Contact/Ordering Information: (address, telephone, e-mail)			
Web Site Address (if applicable):			
Cost of Material:		Continuing Education Credits Available:	
Material Format: Please circle the most appropriate format			
Audiotape	DVD	Manual	Promotional Item
Bibliography	Fact Sheet	Module	Report
Book	Flipbook	Newsletter	Slide Set
Booklet	Game	Online Course	Study Guide
Brochure/Pamphlet	Guideline	Online Resource	Teaching Guide/Training
CD-ROM	Information Card	Photo Novella	Curriculum
Coloring Book	Information Kit	Pocket Guide	Tool
Comic Book	Journal	Poster/Wall Chart	Videotape
Target Audience: Please circle the appropriate target audience(s)			
Advocates	Government Agencies	Long-term Care Residents	Parents
African Americans	Health Educators/Communicators	Long-term Residential Care	Persons with HIV/AIDS
Asians/Pacific Islanders	Health Professionals	Providers	Persons with LTBI
Business and Labor	Hispanics	Managers and Supervisors	Persons with TB
Organizations	Homeless	Medical and Nursing School	Physicians
Children/Adolescents	Infection Control and Occupational	Students	Policy Makers
Civil Surgeons	Health Workers	Migrant Workers	Social Service Providers
Community Leaders	Inmates	Native Americans	Substance Abusers
Correctional Personnel	International Agencies	Nurses	
Foreign-born/Immigrant	Lab Personnel	Outreach Workers	
General Public			
Topic Area: Please circle the appropriate topic area(s)			
Advocacy/Communications	• Skin Test	Long-Term Care Facilities	Racial/Ethnic Minorities
BCG and Other Vaccines	• Skin Test Practice Arms	Managed Care	Schools/Universities
Case Management	• Skin Test Rulers	Migrant Workers	Shelters
Children	• Sputum Smear Examination	Multidrug-resistant TB	Substance Abuse Facilities
Comprehensive TB Materials	Extrapulmonary TB	Outbreaks	Surveillance
Contact Investigation	Foreign-born/Immigrant	Partnership Building	Training and Education
• Interviewing	General TB Information	Pregnant Women	Treatment
Corrections	Guidelines, Policies, and Protocols	Program Evaluation	• Adverse Reactions
Cultural Competence	History of TB	Program Management	• Directly Observed
Diagnosis	HIV/AIDS Co-infection	• Directly Observed	Therapy
• Chest Radiographs	Homeless Persons	Treatment, Short-Course	• Latent TB Infection
• Culture Examination	Infection Control	(DOTS)	• Medication Information
• Laboratory Procedures	• Engineering Controls	• DOTS-Plus	• Patient Adherence
• Screening	• Health Care Workers		• TB Disease
	• Respiratory Protection		Workplace Settings
Please list format, audience, or topic area for your material if the appropriate option is not listed above:			
If your document is available electronically, please e-mail it to info@findtbresources.org. Thank you for your assistance.			